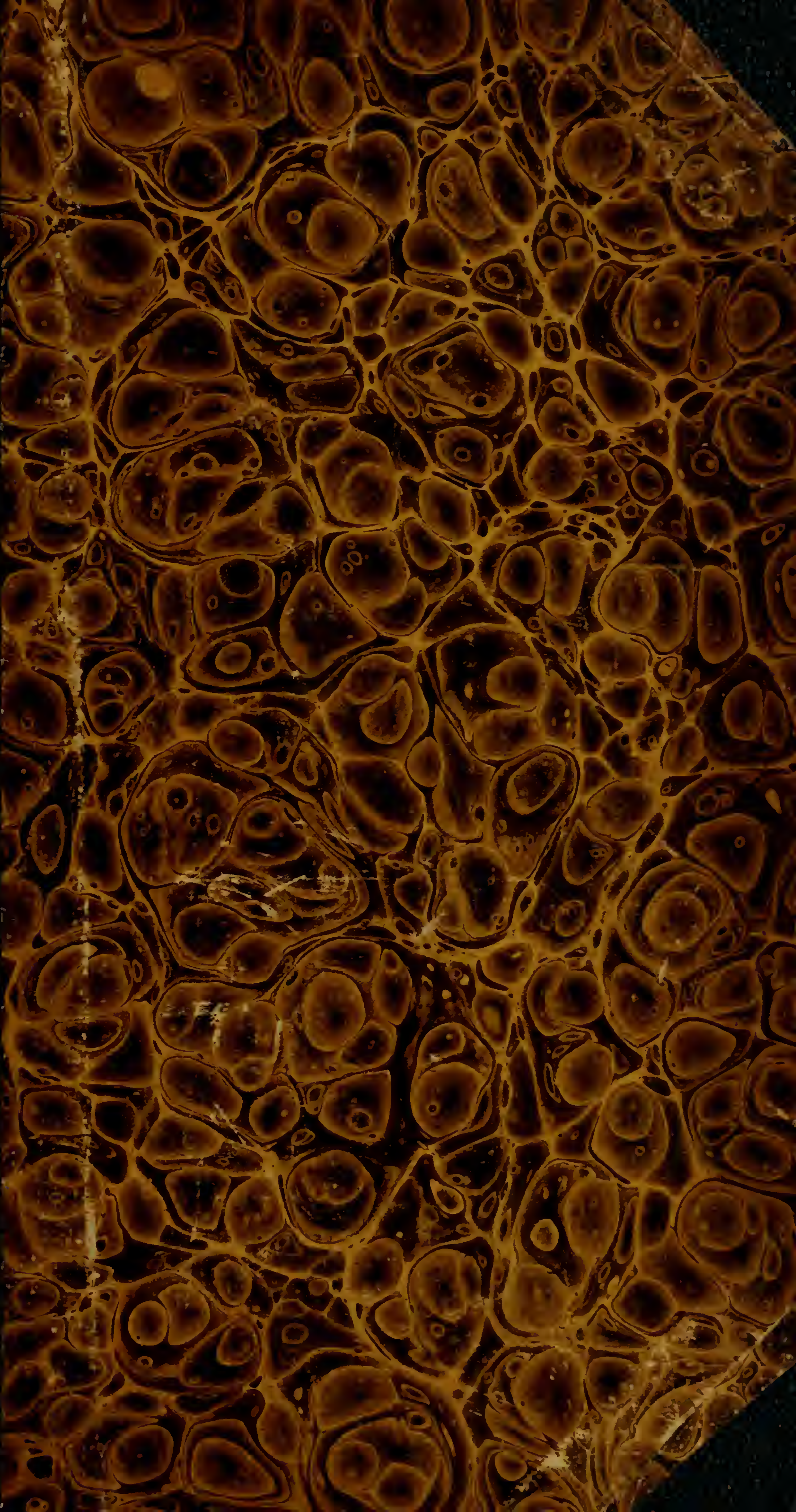

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Vol. 5. No. 1.

2071.

THE
NEW YORK
DENTAL JOURNAL.

EDITED BY
W. B. ROBERTS AND FRANK H. NORTON.

BOSTON MEDICAL
JUN 25 1891

MARCH, 1862.

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NEW YORK:
W. B. ROBERTS, PUBLISHER AND PROPRIETOR,
OFFICE, 691 BROADWAY.

LONDON: TRÜBNER & CO.
1862.

C. A. ALVORD, PRINTER.] [15 VANDEWATER STREET, N. Y.

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TO THE PROFESSION.

Since the introduction of Hard Rubber as a base for artifical teeth, Dentists have been trying with all the means in their power, to procure teeth that can be mounted upon this base that will approach as near as possible to continuous gum teeth; even continuous gum sets have been made, and Rubber base attached, which makes a beautiful looking set, but the expense is an objection, and in case a piece breaks, it requires as much work to repair as to construct the whole piece at first. Since we have been manufacturing teeth, we have given our time to many experiments in trying to perfect something that would give satisfaction to ourselves and the profession. We have tried blocks with the four central incisors; also blocks with the six front teeth, but without success. As a piece when used, receives the greatest strain between the central incisors, checking most any block at that point, especially those mounted upon Rubber base, we feel as though we could say to the profession that we have something that will please them very much; they will be as cheap as the common sets of sections, and will be applicable to most every case where whole sets are required. And for this improvement the profession are indebted to Dr. J. Brockway, well known to the profession as one of the best block workers, who has constructed moulds for us by which we are able to give a whole upper or under set in two pieces, the joint being between the central incisors. They can be mounted upon any kind of plates, but are better adapted to the Vulcanite base. Time would not allow us to give a full description in this number of our Journal, but in our next we will give a full description, with cuts of the same. In order that we shall have them fully tested, we propose to send to every dentist who may wish, a set for a sample; or otherwise an entire upper or under set, for two dollars per set, or an upper and under to match, for three dollars, by enclosing to our address the amount, 691 Broadway, N. Y. The price of the teeth will be the same as sections, twenty cents per tooth. But in order to have them seen and tested by the profession, we propose to put them at this low price, and if they prove to be what they seem to us now, we shall be fully repaid by having them known to the profession; and if they should prove to be less valuable than they appear to us, we shall feel that we have not asked of our brethren any more than a fair compensation for the cost of making them. As an experiment of this kind requires new moulds, and of necessity must be expensive, we would gladly send one set gratis to every Dentist whose address we could obtain, if we could afford to do so, for we feel as though they will be something the tasteful Dentist will appreciate.

THE

NEW YORK DENTAL JOURNAL.

MARCH, 1862.

TO OUR READERS.

The present year, which opens on our country still in preparation for a war whose date of termination no man can predict, promises little for articles of luxury, and the condition of affairs rendering it necessary for every man of whatever profession or calling, to retrench, and deny himself in every thing but necessaries, it follows, that publications, as well as other articles of trade, should be placed at such a cost as to bring them within the reach of those for whom they are intended. Under these circumstances, the publisher of the New York Dental Journal, in beginning his fifth volume, has concluded to change its numerical designation from quarterly to semi-annual. He will therefore publish but two numbers during the present year, dated respectively, March and September. These numbers, however, will contain every thing of interest to the profession in the way of information; presenting all new inventions and improvements, and in September, giving a full report of the American Dental Convention to be held in August. While the volume will thus contain every thing necessary to keep the profession acquainted with the doings of the year, its price will be reduced to $1, which it is thought will be found satisfactory to all.

In connection with this topic we will make a few remarks which occur to us in reference to magazine literature, referring particularly to the publication of professional periodicals. Of course, the primary object in publishing a periodical is to obtain subscribers and advertisers. Now a periodical, to be interesting and valuable to all, should be original, and should contain as much professional news—so to speak—as may be obtainable. The subscriber to half a dozen magazines, finding that each is only a rehash of all the others, becomes disgusted with all, and probably subscribes to none thereafter, when a judicious arrangement of the contents of each would have secured his patronage to all. Again, professional journals should publish only such matters as are interesting and valuable to the class of men to whom they appeal.

A physician would not care to be treated with essays upon the dry rot; neither would the scientific subscriber to a mineralogical journal desire information upon the subject of "Polypi of the Larynx;" yet we have seen in some of the dental journals, articles, scissored from other periodicals, as little connected with the science of dentistry as an article upon squaring the circle would be with the profession of a horse jockey. It has been, and will be, the design of the New York Dental Journal, to publish nothing in its pages that shall appear in other journals—except as copied—and excepting also, reports of meetings, which are, of course, open to all. If we scissor, we shall try and scissor matters having some connection with the science we are seeking to advance, and the profession we are trying to elevate.

REPORT OF THE SOCIETY OF DENTAL SURGEONS.

The Society of Dental Surgeons of the city of New York, met at the Cooper Union, November 12th, 1861, after an adjournment of nearly seven months. The reunion of the profession upon this occasion, proved that, although long separated, each individual member had not lost his former interest in the society or its discussions. The meeting was called to order by the president, reports of committees were received and several members were elected. The annual dues for the year were, on motion, fixed at $2. By resolution (except the regular quarterly neetings), the members of the profession and the public were invited to attend. Dr. John Allen read a paper on atmospheric pressure, in which he took the ground that atmospheric pressure did not always imply suction, although many dentists used the term in that connection. He explained how an artificial dentur was retained in the mouth by suction or atmospheric pressure, and, although a set of considerable heft, there would be no sensation of weight felt by the patient, provided there was a good adaptation of the plate to the mouth.

Upon the reading of this paper, a lively discussion ensued, in which most of the members took part, and it was evident that the season for discussion had arrived. "Filling Teeth" was selected for the next meeting, which took place on November 27th. Several papers were read upon this subject, and several members discussed the subject with much interest. The meeting adjourned to meet on Wednesday evening, December 11th, and the subject being the treatment of deciduous teeth, papers were read upon the subject, and nearly all the members took part in the discussion, the subject being of much interest to the profession (and should be to the public); it took a wide range, and a very interesting meeting was the result. Dr. Latimere proposed the subject of "Facial Neuralgia" for discussion at the next meeting, which took place January 8th, 1862. Several papers were read upon this most painful subject, which occupied the time of the whole evening. The following, upon this subject, by Dr. Wm. H. Atkinson, which he has had the kindness to hand us, will be read with much interest by the profession, and if some parts of this paper could reach the ears and hearts of the millions of human beings who ought to know and appreciate it, we are satisfied that not only would there be less neuralgia, but a less number of the youth of this country, would be consigned to an early grave from debility consumption, insanity, and many other diseases that the world cannot account for, and, which appear to be wrapped in mystery.

PAPER READ BY PROFESSOR W. H. ATKINSON.

As all diseases are but departures from the standard of wholeness of function, or health, it will be pertinent in treating of neuralgia to divide it into separate departments of investigation, viz.: its inception, development, and culmination in death, arrest, or cure.

All science, now recognized as such, by the reigning dynasty of past and present authorities, is in the deplorable condition of divorce—disruption of parts denominated by the authorities, *sciences*—mark well, *sciences*, the plural—just as if it were possible, in the great sense, to have opposing principles in the certainty of knowledge, which science means: hence the puerility of pluralizing the presence of divinity of whole or perfect knowledge in its out-crop in any department of nature, and absurdly dubbing it sciences—knows!

The etymology of the term signifies "to know." As soon as we truly know any thing, we at that moment, by instinctive perception, recognize its relation to that one certitude of knowledge of the infinite which can alone properly be denominated science in the unitary and infinitudinal sense.

It avails us nothing to tarry in the fractional progression of the out-crop of science in the phases of idea, thought, opinion or belief, in their progress to knowledge, and call the present attainment of apprehensive ability by the dignified title of a science. But just this very thing is what the schismatics have ever done, with a hardness commensurable with their lack of true knowledge.

The physician and surgeon, chemist and dentist, are Pagans and Jews, while for the time they ought to acknowledge, and heartily accept and practise, the true Christian doctrine of completeness in all things. The Master said to his followers, "Ye are my witnesses;" that does not mean, to tell the truth in part and withhold a part, or to tell truth part of the time and falsify the truth at other times. Now, this testimony for Christ (truth) does not mean the puerile acknowledgment of him in the seclusion of the cloister and prayer-circle among a special few; but it means a hearty, earnest acknowledgment of him at all times—in the busy mart, in seclusion, in public and in private. And if this be the true interpretation of his blessed injunction to witness to his supreme excellency in all things, it reaches to our works of head, heart and hand, in any and all the multitudinous labors of life. To us of the dental profession, in all our studies and preparations, to bring back those gone from the standard of health, and preventing those who are blessed with soundness from lapsing therefrom in any degree, it loudly calls for cleanness and purity of purpose in all that we do in the receptive or projective forms of professional labors. The labors of a professional man must be threefold, to be efficient for high and good purposes, which may be thus pointed out, to prove the divinity of all true labors or complete works: 1, labors of sense; 2, of understanding; 3, of intuition. Those of the sense are merely material (so called); those of the understanding are moral (so called); those of intuition are truly spiritual and progressive.

Now, to make this clear to those who are only sensuous in all their endeavors, it becomes necessary to state, that each form of labor has a tendency to gravitate to its lowest manifestation. But, in fact, all must be received at the first through the plane of intuition or spiritual influx; and those who have not yet had understanding sufficiently developed to catch and hold the divine favor in the mental part of perceptive ability, catch it and hold it in the senses merely, and hence are truly Pagans or Jews, in all they feel, think or do.

The correspondence of mental labor may be thus stated: in our passions (senses) we are brute, in our sympathies (understandings) we are human, and in our instincts (intuitions) we are divine. Now, if we open to the influx of the divine life-force through the plane of our instincts, and keep open, it will harmonize all the substrata of our natures; but if we close the door of ingress by wicked works, or by turning our backs upon our light and strength, the tendency is to gravitate to the lowest departments of our natures. This is proved by the examples of all men who have preceded us. Even Paul upbraids his Corinthian brethren: "Ye did run well for a season; who did hinder you?" That may very pertinently be repeated to the great mass of those of the present day, engaged in the various activities of life. For, after having been made partakers of the freedom of children of light, most have gravitated to the pampering of lust and appetite by the exercise of all their understandings, which at length invariably, if persisted in, runs them into low and grovelling debaucheries.

My own senses tell me that all who have not emerged out of their home in the senses, will begin mentally to inquire what all this has to do with neuralgia, and feel like calling me to order for not sticking to the subject. All I ask of such is, patient attention to what I say; and if they do not understand, ask for a more clear exposition of the point that seems dark, and be assured that I will stop and endeavor to hold away the curtain that obstructs the light, and let it penetrate by its divinizing effulgence.

Jesus Christ, it is reverently said, "came to seek and save that which was lost.". Can you see that if any restore order to soundness lost, they may truly in so far be putting on Christ humbly and efficiently, even though unwittingly? Ah, my beloved brethren, there is the whole difficulty of the case. The schismatics are always crying out against a healing influence being exercised outside of the regularly accredited way, which would all be well enough if successful and useful results were the means by which "regular credit" were to be proved, instead of some obsolete patent issued by some petty government long since defunct for good, because of the debasement of a low service, rendered to the lowest departments of an undeveloped condition of low necessities, out of which, thank God, the world has grown, and professions are growing. Be assured that our adored America is the land of promise to every lover of freedom, the real Canaan flowing with the wine of refreshment, corn of nourishment, and oil of joy, in the true sense of a wholeness to all philosophy.

How striking is the similarity between this plentiful country and the trans-Jordan Canaan of the wearied Israelites of wilderness journeyings! They "drave out" the heathen inhabitants; we have driven out the wild beasts and the wilder and more dangerous savages, and now the length and breadth of this pleasant and free land literally groans under the rich products of the virgin soil, while Europe is like the Egyptian and wilderness country, crying to God for bread to feed their needy ones. Let us recognize the hand of the Deliverer in all this, and obediently follow after holiness (wholeness) in every department of the activities of life, to sure salvation.

Words used in professions purposely to darken counsel will pass away, and give place to a clear exposition of basal law, exposed in the close scrutiny of earnest, honest, and, may be, blunt conversational investigations.

I. Then, what is neuralgia?

It is not the harmonious and equable circulation of the nerve aura through the tracts of neurine throughout their infinitesimal ramifications and massive return to the seat of perception; but it is some disturbance of this normal current.

The word comes from the Greek for nerve and pain: hence "painful nerve" is the real sense of the term. If we were critically disposed, a play upon the weakness of terms, as such, might be appropriately indulged in here, for it is well known that there can be no pain cognized in absence of this organ of sense. Then let us soberly define what is meant by neuralgia, without going through the mazes of learned nonsense that hedge the subject about.

When from any cause a sensory nerve has so far lost its capacity to hold and transmit the ghost-(sentient) principle as to be incapable of supplying the needs and requirements of the tissue whose depots it normally supplies, these exhaust the "solution of life-force" held in its extremities next these needy depots, and thus we have a true neuralgia —a painful nerve—which calls for more of this mysterious presence; and when the supply is sent from the principal reservoir (the brain and ganglionic centres), the influx is too much for its weakened state to transmit, and it finds (as we sometimes do in certain circumstances, when from debilitating practices we are not able to come to time) that "too much of a good thing is good for nothing," and sets up a howl for the exact attenuation of this presence necessary to arrest and cure this aberration, and we truly say it is Neuralgia.

II. What causes it?

This query can, in our present state of knowledge, be but partially answered to the common apprehension; possibly to a very few, favored by uncommon illumination, the attempt might succeed, by only saying, any thing that disturbs the normal play of function thus involved. Bad food—irregular feeding, even on good and proper food—undue exercise of any part of the physical economy—too much heat—too little heat (or cold), all these have at times produced this state. Mechanical lesion of parts by traumatic causes also, are said to produce this condition; but certain degeneracy of molecular life must precede all exciting or immediate causes of neuralgia. Any disturbing force may do this. But the one cause of all causes most dominant is illegitimate exercise of the venereal function, the head-devil and prime minister, that execrable and indefinable practice—solitary vice. I would to God that I could make every boy and girl, yea, man and woman, in the vast earth comprehend and apprehend the worse than death that lurks in this species of vice, this sin against the Holy Ghost, that hath never forgiveness, neither in this world (generation) nor the world (generation) to come! Who is there that has a heart but would cry aloud and spare not, could they but know the tithe of what many a coward, heartless physician knows, who, for fear of losing a paying family, neglects to do his duty to them in time to expel disease and loathsomest death from the household. I know there are not wanting men who call themselves physicians, and dupe people into employing them as such, who deny the wholesale death lurking in this practice. But I have never met the first one of them who did not yield his ground or throw himself back upon his assumed dignity in moody silence, and abnegate the whole thing sententiously under lashes of his better conscience, all the while refusing replies to direct searching queries. Some have gone so far as to refuse to teach their patients' families how to avoid disease, under the unchristian plea that curing disease and not preventing it was what they studied their profession for. I leave all such to wallow in mire too deep and dangerous for any but the strongest Christian to safely enter, even for redemptive purposes. Having touched upon the important question of what causes neuralgia, in this slight and superficial manner, which, if time and circumstances permitted, could be made so pointed that neuralgia would be taken off its genteel stilts and shown, as it truly is, the patent testimony of guilt of no ordinary, trivial or venial character. The wonder is, that any once involved in it are ever extricated, rather than that our best means are so powerless to cure this opprobrium of surgeon, physician and dentist in their various practices.

III. How may it be cured?

Synthetically, this is easy to answer, and is—"Obey the laws of being in a correct and *active* life." But what that means, it would require volumes to unfold in detail, to meet the apprehension of the fractional knowledge of the patient, or him who has to deal with this lapse from soundness of nervous function. To cure a local neuralgia, we must bring the attenuated life-force in contact with the debilitated part; and hence the practice so much in vogue just now of subcutaneous injection of "solutions of the life-force"—the various narcotics and sedatives, from which such direct and lasting results have been derived. The salts of opium are preferred—but atropin and nicotin, no doubt, would be powerful remedies so used.

In neuralgia, as in all other forms of disease, "remove the cause and the effect ceases," is sound and intelligent doctrine. If what has been said of the disease and its causes be well borne in mind, the best treatment will naturally suggest itself to the inquirer. It is not my purpose to load down your memories with mere empirical formularies for the so-called distinct diseases, but to bring you to a truly scientific apprehension of the principles involved, so that, having a proper understanding of the cases presented to you, your intuitions will safely lead you to the best remedies for each case as it may arise. There is no high, easy and royal road to diagnostic ability and a marked competence of skill, other than through our instincts. First understand the laws of integrating of nervous tissues, their anatomical and intimate character, structure and relations, and a quick and correct apprehension of distintegrative and disruptive molecular actions, and the analytical principles which underlie them will be easy. Thus endowed with a correct knowledge of healthy and unhealthy manifestations and conditions, with heat and cold, narcotic, magnetic and mechanical appliances at hand, you may intelligently and promptly succeed.

Wednesday, Jan. 22d, 1862.

Neuralgia, the subject of discussion at the last meeting, was continued.

Dr. Perine opened the discussion by relating a case of neuralgia he had been called to see, and which had been under the charge of Dr.

Latimere, and asked the Doctor to give some account of what his experience had been in this case. Dr. Latimere stated that it was a peculiar case, and he was unable to say what caused the difficulty. He could discover no teeth which he thought produced it, yet, a crowded state of the teeth was observed, but thought it doubtful whether pressure of this sort could produce neuralgia.

Dr. Atkinson discussed the subject of *lateral pressure*, and thought that if neuralgia could be produced by any thing, it could be by that. He said it would be impossible for the common pressure of teeth to produce neuralgia. He did not understand what Dr. Latimere meant by lateral pressure.

Dr. Latimere supposed it was where you find the arch overcrowded with large teeth, and mentioned an instance of a boy, in which the last tooth on the left side of the lower jaw was coming through, and there was not room for it. The patient suffered great pain and insisted on a tooth being removed, which was done. He thought that the theory of the attenuation of the nerve being a difficulty, was a good one, but that there seemed to be some objection to it.

Dr. Ingersoll recited a case of a lady about forty years of age, who was troubled with very severe pains every day, lasting some hours; at first, about four o'clock in the afternoon, and each day appearing about half an hour earlier than the previous day. Some of her teeth had been filled, and were in a safe condition. The Doctor had determined on a course of constitutional treatment, when she came one day to his office and said she did not want any thing done. She has not been troubled in any way since. The pain appeared to be located on the right side, about the molar bone. There were teeth on that side that had been filled.

Dr. Roberts supposed a little experience in these matters is as good as theory, and therefore, he should give some cases that he met in his practice, and let the theories be discussed by others. He said that his experience was in cases of severe suffering, that it nearly always proceeded from a diseased tooth. The first case he would refer to, was that of a lady, of strong constitution, healthy and robust; who had been troubled with neuralgia about four years; the paroxysms coming on periodically. He was called in to see her, and found that several of her teeth were diseased. She said that during her paroxysms she felt the bicuspid on the right side rather sore, which, after some hesitation he extracted, without producing any relief. He then desired her to take particular notice of the part most affected. After a few days of careful attention to his instructions, she said she felt a slight twinge at a particular point in the lower jaw, and on careful examination he discovered a small portion of a root—about one-fourth of one of the fangs of a molar tooth, which being extracted, the pain entirely ceased. The piece of tooth extracted, looked as fresh as if it had been broken off only the day before. Upon careful inquiry he found that the first ever felt of these paroxysms was when the first molar tooth of the lower jaw became diseased; she had it removed, but it never relieved the pain until the small piece of root was removed, which produced a permanent cure, at least, for seven years, as the patient was under his care that length of time after the operation of removing the root. There was no doubt but the breaking and leaving in of this root had caused these dreadful pains four years; the gum having closed over it, the patient had always supposed that it was all removed.

Another case was that of a lady who had been affected with neuralgia about eight years. She had always been subject to bad teeth, and had tooth after tooth taken out, until finally she had but one left—a molar, on the right side of the lower jaw. The neuralgia then left her, and she had a set of teeth inserted, which she wore for ten or twelve years, when she again felt a return of the pain. On first examination the Doctor pronounced the remaining molar tooth perfectly sound, but directed the patient to take notice when she first felt the pain coming on, to discover, if possible, the point where it first began. In a few days she returned and informed him that a twinge was first felt in the tooth, and that it passed all over the side of the face; he examined it more carefully, and discovered a small cavity near the edge of the gum that reached to the nerve. He extracted this tooth, now about eight years since—and there has been no return of the neuralgia.

He thought it very important, when a case of this kind occurs, that a careful diagnosis should be made, to be certain there is no tooth, or root, that produces the effect.

He also mentioned a case, the result of which he had not yet ascertained. It was that of a lady, for whom he had made a set of upper teeth, and filled the second molar and one or two others of the lower teeth. Some six or eight months ago, she came to him and said she had been cutting a new tooth, and of all the teeth she ever had, this gave her the most trouble. There was a little flap of the gum over the tooth, which he removed without giving any relief, and finally, at her urgent request, extracted the tooth, which was perfectly sound. The tooth he attributed the disease to was the one that was filled.

Dr. Allen remarked, that in reference to neuralgia, he found that there were many who mistook their diagnosis, and it was on that account that a great deal was called neuralgia that ought not to be. Where the pain was located about the head or face, he almost invariably traced it to some diseased tooth. He did not wish to be understood that all cases of neuralgia proceeded from diseased teeth. He stated the case of a lady who had suffered intensely for two years. She had lost a number of her teeth, and had no molar teeth remaining in the lower jaw,—the upper teeth were nearly all sound. He removed the two molar teeth, about which there was no apparent decay, but on one of the fangs there was exostosis, and it was about as much as he could do to get that tooth out. She has never experienced any pain since. They had no antagonists.

He related a very striking case of a lady in Cincinnati, who had been attended by the first physicians, and they pronounced it neuralgia. When he visited her, he concluded that they had made a mistake in their diagnosis. At this time the patient was in a very reduced state, not being able to sit up more than two hours a day. On examination, he became satisfied she was suffering from diseased antrum, and he told her it would be necessary to remove a molar tooth and perforate the antrum. She consulted her physician, and he advised her to allow the operation to be performed. Dr. Allen removed the tooth, perforated the antrum, and a great quantity of matter flowed out. It had gone so far as to produce gangrene. He visited her every day and syringed it out—first with a solution of nitrate of silver, making it gradually weaker—and finally the lady got well.

Dr. Atkinson said: The particular mode by which neuralgia may be produced in such cases as cited by Dr. Allen, where the exostosis was found obstructing the neural circulation, may be better understood by a recapitulation of the anatomy of the nerves, viz.: the neurone is the proper vehicle of the nerve aura, or galvanoid fluid, traversing this gelatinous mass enclosed in the nerve-sheath or neurilemma. The osseous deposit crowding this last tissue so as to contract its calibre, reduces the quantum of the jelly-like plasm, neurine, and hence weakens its capacity to transmit neural currents, and thus we may have neuralgia from the calcification or consolidation of ossific deposit. When this has once taken place, it is rare indeed, that the part recovers its normal tone, as is proved in all gouty, rheumatic, and neuralgic cases heretofore reported. I would rather extirpate the distal end of the diseased nerve, and trust to nature to take care of the case under good and proper regimen, than to give much assurance of sound recovery in such cases. But where the nerve is of prime importance to the system, we must not fail to earnestly do all we may safely do, for the restoration or comfort of the sufferer, upon the pinciples already indicated.

Dr. Lattimere said, that there seemed to be a little confusion as to neuralgia. We are told that neuralgia proper is known by its pain, and follows the line of the nerves; that it comes suddenly, and goes away as suddenly; it is a regular intermittent, and at other times irregular. It is known from regular toothache by the character of the pain, and must never be mistaken for it.

After some further discussion, "General Diseases of Teeth, their Causes and Treatment," was chosen for discussion at the next meeting, which took place on Friday evening, Jan. 31st. Upon this subject, several papers were read and discussions of interest had, when the society adjourned, to meet on Friday, February 7th, and the same subject to be continued.

DAY'S RUBBER PATENT.

REISSUE NO. 620.

The United States of America, to all to whom these letters patent shall come:

Whereas, Austin G. Day, of Seymour, Conn., has alleged that he has invented a new and useful improvement in treatment of Caoutchouc (for which letters-patent were issued to him, dated, August 10th, 1858, which letters having been surrendered by him, the same have been cancelled, and new letters ordered to issue to him on an amended specification), which he states has not been known or used before his application, has made oath that he is a citizen of the United States; that he does verily believe, that he is the original and first inventor or discoverer of the said improvement, and that the same hath not, to the best of his knowledge and belief, been previously known or used; has paid into the treasury of the United States, the sum of fifteen dollars, and presented a petition to the Commissioner of Patents, signifying a desire of obtaining an exclusive property in the said improvement, and praying that a patent may be granted for that purpose.

These are therefore to grant, according to law, to the said Austin G. Day, his heirs, administrators or assigns, for the term of fourteen years, from the tenth day of August, one thousand eight hundred and fifty-eight, the full and exclusive right and liberty of making, constructing, using, and vending to others to be used, the said improvement, a description whereof is given in the words of the said Austin G. Day, in the schedule hereunto annexed, and is made a part of these presents.

In Testimony whereof, I have caused these letters to be made patent, and the seal of the Patent Office has been hereto affixed.

Given under my hand at the City of Washington, this ninth day of November, in the year of our Lord one thousand eight hundred and fifty-eight, and of the Independence of the United States of America, the eighty-third.

Countersigned and sealed with }
the seal of the Patent Office. }

JACOB THOMPSON.
Secretary of the Interior.

J. HOLT,
Commissioner of Patents.

The Schedule referred to in these Letters-Patent and making part of the same.

Be it known: That I, Austin G. Day, of the town of Seymour, county of New Haven, state of Connecticut, have made or invented a new and improved method of working what is usually denominated "Hard Rubber Compounds," and I hereby declare that the following is a full and exact description thereof.

The nature of my invention consists in a new method of treating sulphur and caoutchouc, or sulphur and any equivalent or vulcanizable gum, in order to make an artificial product having definite properties, namely, hardness, flexibility, indestructibility and elasticity.

It is well known to the manufacturers of vulcanizable gums, that Charles Goodyear, on the 15th of June, 1844, patented a method of vulcanizing rubber to preserve it *soft and flexible* when exposed to the summer's sun or winter's cold, or to the action of various solvents; and that Nelson Goodyear, in 1851, on the 6th May, patented a process of manufacturing what is usually called "Hard Rubber Compounds," but which is exactly defined by the patentee in his first claim, calling it a *hard and inflexible substance* hitherto unknown.

I call particular attention to this hard and inflexible compound, because in a re-issue of the same patent on the 18th May, 1858, the character of inflexibility then recently discovered and claimed by the patentee, and considered as its chief recommendation, is hardly recognized in the reissued patent of 1858, but other and different features seem to have been set forth in a prominent light as the invention.

My invention consists in a special mode of making a hard, but *highly elastic gum compound*, by a process differing in the length of time, in the degree of heat and in the proportion of the ingredients, and in the mode of equalizing the temperature, from that described by Nelson Goodyear in his patent of 1851.

The reissue of 1858 having changed the original character of the product, the invention itself seems to be entirely lost sight of in the reissue. I am therefore compelled, in order to compare my present invention with that of Nelson Goodyear's of 1851, to refer to the original issue, rather than to the reissue for that which the patent described as the invention. This being a definite and fixed product, endued with the property of inflexibility, could not be changed, however much the manner of describing it may vary. And while Charles Goodyear patented soft flexible vulcanized rubber products, and Nelson Goodyear patented hard inflexible rubber products, I have discovered a hard but elastic and flexible product, made by a certain specific process, which I will describe. But before doing so, and in order that the art may be better understood, and my experiment better appreciated, I will give a short statement of the general condition of the art up to about the time of my experiment, and then rehearse the substance of those experiments.

The design and scope of Charles Goodyear's experiments and results, patented June 15th, 1844, consisted in devices for preserving the natural properties of caoutchouc, and in adding thereto qualities of durability, so that it will withstand the test of time, heat and cold, and also resist the action of the various known solvents of rubber. These results have been set forth but imperfectly in what was called the vulcanizing process. They were badly described because imperfectly understood. Thus the character and cause of what is denominated efflorescence in vulcanized goods, was not known till announced by Payen (Comptes Rendus, 29th March, 1852), who has given a clear statement of the cause, showing that this effloresced sulphur had never been chemically combined with the vulcanizable gum, but only deposited in its pores, and subsequently crystallized out by atmospheric and other changes. On the other hand, the sulphur, which had been chemically combined, properly constituting the vulcanized gum, is incapable of efflorescing or separating from the gum. It is a new and comparatively stable sulphuret of caoutchouc endowing the gum with entirely new properties. The manufacturers, who were not aware of these facts, mistook the effloresced sulphur as having arisen from having used too much sulphur in the compound, began to diminish the proportion to obviate the evil, till the amount used was, in some cases, less than two per cent. of the mass, and no two manufacturers would be working with the same compound. Manufacturers were consequently working in the dark. Large amounts of goods were more or less damaged; sometimes from the proportions of the ingredients, sometimes from the impurities in the raw material and sometimes from the defect in the curing process. Thus it has taken nearly the whole of the life-time of the patent to develop the process of manufacture. And although Charles Goodyear did commence with some degree of success the process of vulcanizing in 1841, and patented the same in 1844, yet so imperfectly was it understood at the time, that even Charles Goodyear himself could scarcely repeat his own process twice with the same result. And manufacturers trying to use his process were of course in the same predicament. Sometimes the attempt to vulcanize, would utterly fail without any apparent cause. Sometimes a specimen would be perfectly vulcanized in one part and not at all in another part. Sometimes a thin piece would be cured too much and a thicker piece not cured at all. Sometimes goods on being removed from the heater would appear in good condition, but by a few weeks' or months' exposure they would be flabby or sticky. The smell and efflorescence of sulphur on the surface of the goods, were strong objections made by the wearers of the manufacture, and it was naturally enough inferred by the manufacturers that too much sulphur had been used. Hence the efforts to avoid the evil by diminishing the quantity of sulphur in vulcanizing below that described in the patent. But it has been found after years of practice, that the proportions prescribed in the patent were, after all, the best average for soft elastic rubber. And the manufacturers, instead of attempting to remove so-called surplus sulphur, now known to be indispensable to successful vulcanization, diminished the amount of sulphur, using too small a proportion to vulcanize the goods; and thus vast sums were lost to the manufacturers by damaged goods thrown back on their hands. At length the evil was suspected, and they began to return to the prescription of the patent. The efflorescing surplus sulphur was removed by solvents, which do not act on that which is chemically combined with the rubber. It is now known that the sulphur which effloresces from the goods was not chemically combined, but only deposited in the pores of the gum, and may be removed by solvents, or expelled by properly running the heat used to vulcanize. Thus much for the soft vulcanized gum.

The same kind of uncertainty, though, to a less extent, has attended the hard rubber manufacture, patented by Nelson Goodyear in 1851. The working compound of the patentee was 1 part by weight of rubber, ½ part sulphur and ½ part of some earthy oxide or base, as lead, lime, &c., and the vulcanizing process was that claimed by Charles Goodyear in 1844, namely, heating the compound 6 hours, more or less, at a temperature varying from 260° to 275° Fahrenheit.

The description and claim of a *hard inflexible product*, sufficiently fixed the character of the invention, so that, however the description might vary, the product must remain the same.

Besides the working compound described by Nelson Goodyear, he refers to a second compound, consisting of sulphur and rubber, of which he says in the specification:

"When sulphur and rubber are used alone, equal parts by weight of each are necessary, indeed a much less proportion of sulphur would not suffice."

But as the last compound has never been used in practice, being found too brittle and not being vulcanizable within the limits of Charles Goodyear's prescription for vulcanizing, it is disposed of without further remark.

I took up the hard-rubber manufacture at the time of the issue of the Nelson Goodyear patent of 1851, having a single object in view, namely, the manufacture of a *hard elastic compound*, in which I used with success both rubber and gutta-percha. I found, however, but one kind of rubber in the market that could be used with any certainty of success, and that was the best Para rubber. I soon learned that to produce a tough elastic product, I must abandon the Nelson Goodyear compound and confine my experiments to the use of sulphur and rubber, or sulphur and other gum. For though the earthy base increased the facility, shortened the time, and diminished the heat necessary for vulcanizing, in the same degree did it diminish the strength, flexibility, and toughness of the article. But the prominent obstacle in the way of the manufacture when I commenced my experiment, as I have since found, was, that every kind of rubber in the market abounded in impurities which interfered with the vulcanizing process, so that fine Para was the only one that I could use with any certainty of success. Even this, for the best manufactures, requires a thorough cleaning and drying. Besides every degree of difference in impurity required a difference in the process used to vulcanize it. Again it was almost impossible to produce a uniform vulcanization in all parts of the vulcanizing charge. After working several years on the crude rubbers of commerce, and having devised several modes of separating the foreign matters from the pure gum, in order to find a uniform article to work on, and as the preliminary steps to the present invention, I perfected my process of cleaning crude rubber, and patented the same in June, 1856. For although I succeeded occasionally in making fair specimens of hard elastic product in 1851 and 1852, the results could not be relied on as certain. But by means of my cleaning process there have been introduced to the manufacturer some four or more different crude gums, which previously no one was able to use; and besides, some of these were hardly known to the public, at any rate not in quantities to supply manufacturers, and were only matters of curiosity. The process of cleaning opened the way for new articles of commerce, and furnished the means to distinguish them from each other.

By this purifying process, I found the following five commercial articles to contain the following percentage of impurities; the same being an average of a large number of specimens tried:

1. *Para Rubber* consists of three distinct qualities; fine, medium, and coarse.

The fine contains 8 to 15 per cent. of moisture and dried sap.

The medium 20 per cent.

The coarse 30 per cent. of impurities.

The fine Para is the standard of quality in the market.

2. East India rubber embraces eleven different varieties belonging to as many different trees and vines, collected without regard to cleanliness, or quality, filled with various foreign substances, as dried sap, sand, sticks, and bark, closely blended and amounting to 20 per cent. It is softer than the Para rubber. A part of these varieties constitutes the bulk of the present market supply.

3. *Guayaquil Rubber* contains 25 to 35 per cent. of putrid sap, sand, ticks, &c.; it is hard, and not easily cleaned.

4. *Carthagena Rubber* is hard and tough, contains 10 to 15 per cent. of dried sap, &c., and is very hard to clean.

5. *African* Rubber contains 25 to 40 per cent. of foreign matter, mostly an acrid sap; it is a soft and flabby article, and if the sap be retained, on exposure to the atmosphere the gum is decomposed and spoiled. It comes from the west coast of Africa.

These several kinds I have noticed in the order of their quality in the market. They are here introduced, because by my cleaning process they all are applicable to my vulcanizing process, and because they were not susceptible of such use before. The knowledge of another peculiarity of crude rubber is very important to the manufacturer, growing out of its granular structure; the mass being made up of rounded granules, having intervening pores capable of absorbing and retaining moisture to the amount of 18 or 25 per cent. of its weight. If this water be not removed before the attempt to manufacture the goods, it will be the means of damaging them, and has been the source, as I have known, of much evil to the business, by deteriorating the product. The crude gum must be first purified to secure a uniformly good result.

Having cleaned either of the above crude gums in accordance with my process, patented to me in 1856, I proceed to the second step in the process, namely, the mixing of the rubber and sulphur in the proportions of sulphur used for each kind of rubber, as follows:

Para, 1 lb. of rubber will take, say, 8 ounces of sulphur.
East Indian and African, 1 lb. 8-10 ounces of sulphur.
Guayaquil or Carthagena, 1 lb. 6-8. " " "

The last two being harder, require less, while the East India or African, being softer, may require more sulphur than the Para. The mixture is made in the usual way known to manufacturers.

A third obstacle in the manufacture of hard-rubber products respects vulcanizing thick pieces. In the manufacture of soft elastic rubber, there is less difficulty in vulcanizing thick masses, on account of the porous or spongy condition of the vulcanized compound. But it is far otherwise with the hard-rubber compound, whether it be the flexible elastic, or the inflexible variety patented by N. Goodyear. In the vulcanizing process, however performed, there is eliminated during the whole operation, a constant discharge of sulphuretted hydrogen and other sulphuretted gases, which must have means of escape through the pores of the mass being vulcanized. The escape of these gases from soft elastic rubber is very easy, but from hard rubber or percha, whose pores on the surface portions are very close, it is difficult for them to escape. The consequence is, that the mass is liable to be exploded from the increased pressure of the confined gases within the mass. Hence, the triple length of time required to vulcanize my composition, and the greater heat to expel the gases. The explosion of the mass is accompanied by an instantaneous elevation of temperature and charring of the internal portions of the mass. It is also attended by greatly increased internal pressure on the heater. From the great degree of compactness of this composition, where rubber and sulphur only compose it, great difficulty has been experienced in vulcanizing pieces of a half-inch to an inch in thickness. But by my present improved management of the heat in vulcanizing, I am enabled to vulcanize pieces of an inch or more in thickness with great uniformity and perfection.

The fourth point of my improvement respects the length of time, and the degree of heat necessary to give the required elasticity to the vulcanized compound. The time, the temperature and the composition of the matter thereof, constitute the process. The mere fact of heating a vulcanizing compound a given length of time, or at a given temperature, without combining therewith the ingredients and the proportions, would lead to nothing but confusion and error in the hands of the manufacturer. It is simply because time, heat and composition of matter constitute the indispensable elements of the process ; the time and heat used by Goodyear, are good enough for their composition, while they would be worthless for mine. Each of these elements must be adapted to, and in a certain extent controlled by the others. If one be taken as the starting or fixed point, the others must conform. The product being the same in all cases here considered, supposing six hours' heat, be the starting point, the composition in that case must be rubber, sulphur and earthy base, because rubber and sulphur alone, could not be sufficiently vulcanized in that time, nor even in a much less time than 12 to

18 hours—to produce the best hard elastic product. Again, suppose the *time of vulcanizing* be the fixed point, and set at 12 to 18 hours; the composition of rubber, sulphur and earthy base, if used, would be overdone and worthless, while a rubber and sulphur compound treated thus, would be vulcanized to produce the most perfect result.

Again, suppose the *vulcanizing heat* to be the fixed point, and set at 274° to 300°, the earthy base composition would be brittle and worthless, even at the end of six hours, and nearly charred at an eighteen hours' heat; while my composition, of gum and sulphur only, would have an ivory hardness, with the spring temper of steel. It is therefore clear, that the elastic hard-gum compound cannot depend solely upon any single element of the combination, but on the mutual action of the three, no one of which by itself may be new. Thus Thomas Hancock heated his soft rubber compound from 275° to 370°. Charles Goodyear says: he runs his heat from 212° to 350°. The former continued his heat from 1½ to 60 minutes, and the latter 360 minutes, but each used a different composition of matter, though they produced a similar result—that is, a vulcanizing product. Again, in the Nelson Goodyear, or hard-rubber patent, the composition containing an earthy base combined with the sulphur and rubber, required but six hours to produce the hard-rubber compound, from the fact that the earthy oxide, by its porousness facilitated the escape of sulphur gases, and thus very much shortened the period of vulcanization, but the product was at the the same time destitute of flexibility and elasticity.

In the present case, the composition being confined to rubber and sulphur without a third ingredient, and to a proportion neither used nor described by either of the Goodyear patents, and producing a result not known when these patents were issued, the combination is a legitimate one, it is new, and therefore patentable. The ingredients being only rubber and sulphur, required about three times the length of time to vulcanize ever used before. And the result, as is evident from inspecting Nelson Goodyear's original patent of 1851, was not then alluded to by that patentee. To attain it with certainty and facility, as I am now able to do, cost me many years of labor and expense. As already stated, I commenced my labors with the vulcanizing process about the time of Nelson Goodyear's patent in 1851. But I soon learned that with my composition, his time of heating and temperature were no guide for me, as I confined myself to the simple compound of rubber and sulphur, which I had done from the beginning. Nearly six years have been expended in efforts to perfect the process. The most formidable difficulty was the uncertainty of the expected results, which I often obtained and often failed in, but could not divine the cause of the failure. This evil among manufacturers has been so great as in some instances to absorb the whole capital stock of a company. In the first place, from not knowing the difference between using the crude and the purified rubber; secondly, that the time and the temperature could not be easily adapted to work pure and impure rubber, as a different management was required for each degree of purity in the article used, and thirdly, the want of means or ability to equalize the heat in every part of the charge during vulcanization. My cleaning process, which had already taken more than two years to perfect, opened a new field of investigation, enabling me to use the poorest, as well as the best article in the market, and always to have a certainty of a pure article to work upon. Therefore, it was not till the date of my cleaning patent of 1856, that I was prepared to settle upon the time and temperature necessary to successful vulcanization of my compound. The composition and kind of rubber having been selected, the time and the degree of heat adapted thereto for vulcanization will be seen by inspecting the tables below. After suitably placing several articles to be vulcanized within the heater, which consists of a strong iron cylinder, resting on its side and calculated to resist a heavy pressure of steam within, the steam is let on and the heat run directly up to 275° Fahrenheit, and the process finished in from 10 to 24 hours, as follows:

In the first case, the articles are supposed to be about ¼ of an inch in thickness and to require 10 hours for vulcanization.

1. The heat is run directly to 275° and allowed to stand 4 hours,
then run to 280° for - - - 2 "
" " 290° " - - - 2 "
" " 295° " - - - 1 "
" " 300° " - - - ½ "
" " 305° " - - - ½ "

2. Stock that is about ⅝ inch and requires for vulcanizing 13½ hours.

Then heating is commenced at 275° for 6 hours.
Then raised to 280° " 3 "
" " 290° " 2 "
" " 295° " 2 "
" " 300° " ½ "

3. Vulcanization is more difficult with thick than with thin articles, from the fact already stated respecting sulphuretted gases escaping through the pores of the gum; under these circumstances if the mass harden externally faster than internally, the confined gases may explode the mass and spoil the form. Therefore the heat is continued a long time at 275°, thus:

When the stock is ⅝ to ½ inch in thickness; the heat is
raised directly to 275° for 6 to 12 hours.
Then " " 280° " 4 "
" " " 285° " 4 "
" " " 295° " 4 "

These tables are given merely to show the general range of time and heat. I do not confine the heat to 300°, but I sometimes do run it to 310° for the last hour but one, and to 315° or 320° for the last hour, or the last half-hour. I also make various changes in the length of time and degree of heat at the different steps of the process below 300°, to adapt the heat to different kinds of stock or different degrees of vulcanization, as required for different articles of manufacture. I have also learned that the intervals or grades of heat, will give a tolerable result by commencing the heat at the highest point of the scale, and ending with that of the lowest, but using the same intervals as before, I have also tried a third plan, which consists in running the heat directly up to 295° or thereabout, and retaining it there for say 24 hours, or till the process be finished. But the result is not as good as when we commence at 275° or thereabouts.

It has been found that with all the experiences thus far obtained in the manufacture of hard rubber and other gum compound, if vulcanization is performed in large heaters, it is difficult if not impracticable, to vulcanize equally in every part of the heater. Articles in one portion of the apparatus will be done too much or burnt, while those of another part will be slack. These imperfections I have greatly obviated by establishing a circulation in the heater which equalizes the temperature in every part of it. This may be accomplished by means of a double-acting pump, or a fan, or other equivalent device, which shall draw out the steam from one end of the cylinder and transfer the same into the head of the opposite end, as seen in the drawing, where A represents the heating cylinder, supplied with steam for heating it up under pressure by the tube (c). The articles to be vulcanized are placed within A. The circulation to equalize the temperature in all parts, is made by working the pump B, or its equivalent, which draws the steam from the C end of the heater through valve (a), and forces it through valve (b) and thence through pipe D, whence it strikes against head F, and is distributed through the perforated plate E, and so through the body of the cylinder. It is evident that a single-acting pump or a double-acting pump, or a rotary pump, or a forcing and exhausting fan may be used for this purpose. I do not now claim any special form of apparatus, for a variety of known apparatus might be used to accomplish the effect. Even a current of steam forced in at one end and out at the other, would also aid in keeping up the circulation, and tend to equalize the heat but very imperfectly. The novelty consists in the making an artificial circulation in a vulcanizing apparatus, irrespective of the special means so long as those means are mechanical.

I do not claim in the broad vulcanizing rubber or equivalent gums, irrespective of the special process used and product made, but—

What I claim as my invention and desire to secure by letters-patent, is running the heat for vulcanizing flexible and elastic hard gum compounds through the high range of temperature and the comparatively great length of time substantially as set forth; that is to say, commencing the heat at about 275° and carrying the same to 300° and upward, substantially as described.

I also claim making as described, the flexible and elastic hard gum composition, of two parts by weight of rubber or other vulcanizable gum and one part of sulphur, when such composition is preparatory to the running of the heat as described in these specifications.

I also claim equalizing the temperature in the heating apparatus by mechanical means substantially as set forth.

AUSTIN G. DAY.

Witnesses,
W. W. Bogardus,
E. R. Bogardus.

THE ETHER PATENT.

We noticed the fact last week that Dr. Morton had commenced prosecutions for the infringement of his ether patent, that the first institution summoned to answer the charge was the New York Eye Infirmary, and that the case was arrested for the present term by the Judge, on the ground of doubts as to the validity of the patent. It may not be out of place at this time to review briefly the leading facts in the history of this case.

Priority of discovery of anæsthesia by the vapor of sulphuric ether has been a sharply disputed question between the friends of the late Dr. Horace Wells, of Hartford, Ct., and Dr. Morton. We shall be content, however, to let this question rest where the majority of medical men have placed it, viz., that Dr. Morton is entitled to the credit of having reduced anæsthesia to actual practice. The first use of ether as an anæsthetic in surgical operations was made in the Mass. General Hospital, Oct. 16, 1846, Dr. John C. Warren being the operator. Application was at once made to secure a patent covering this discovery, and in about a month from the above date letters patent were issued. Dr. Morton was not at that time a medical graduate, but subsequently obtained the degree of M. D. from the Washington University, Md. The patent was issued in the names of Dr. C. T. Jackson and Dr. Morton, but the former subsequently assigned his claim to the latter.

The profession of course condemned the patent, but they were assured that there would not be the slightest restrictions put upon the use of ether. It is stated that Dr. M. "requested Dr. Warren to give him as perfect a list as possible of all the hospitals and charitable institutions in the country, that he might present them with the use of this new blessing to their suffering patients. This praiseworthy request was granted, and soon every eleemosynary institution in the country, where surgical operations were performed, every charitable hospital, and many eminent surgeons, were offered free license to use the discovery."

In putting the most charitable construction upon the patent, it is difficult to overlook the fact that the right of using it was understood, that a second was obtained in England, and that efforts were made to obtain others in continental countries. It would not be doing violence to human nature to suppose that the patent was obtained for the purposes of gain, and this impression is strengthened by certain incidental circumstances, but we prefer to believe that the alleged reasons for securing it are those which alone actuated Dr. Morton. These are: "1. He wished to make such modifications as experience might suggest, as regards the method of exhibition; 2. He wished to instruct a suitable number of competent persons, who, when wanted, could go to any part of the country and administer it themselves until its merits were fully established; 3. He wished to prevent its being at its infancy brought into disrepute or doubt, by ever being used at the hands of injudicious or unskilled persons."* It has also been alleged by Dr. Morton that he "procured the patent to enable him to induce the government to reimburse him for his expenditures in making and establishing the importance of the discovery to the world."

Certainly, no effort was made to enforce the patent; ether soon came into general use, without fee or reward to Dr. Morton. Looking toward compensation for his discovery, Dr. Morton soon after, Dec. 28th, 1846, made application to Congress for an appropriation of $100,000 as a "national recompense." His application was favorably received, but the claims of Drs. Jackson and Wells, as the discoverers of ether, were also pressed, and the session passed without any definite result being reached. A second application was made in 1849, which met with a similar fate. In 1851, a third application was more favorably received than either of the former, and commanded the hearty support of the leading members of both houses, but this measure likewise failed. In 1853, Dr. Morton made his final attempt to obtain a reward from Government, but so determined was a factious opposition that the bill again failed. It was now contended by the opposition that Dr. Morton's true remedy was in the prosecution of the Government for the infringement of his patent in the use of ether in the Army and Navy; such suit being sustained, Government would be compelled to make proper payment. Efforts were now made to induce the Secretaries of War and the Navy to purchase the patent, or to forbid the further use of anæsthetics in their respective departments. But these efforts also failed, and Dr. Morton quitted Washington in despair. He returned home enfeebled in health and burdened with debt. He was strongly urged by legal counsel to bring a suit against Government for infringement of his patent, and thus secure himself against impending ruin. A suit was accordingly commenced against the Physician of the U. S. Marine Hospital, Chelsea.

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* Trials of a Public Benefactor, as illustrated in the discovery of etherization.

Meantime, in the spring of 1857, at the suggestion of Mr. Amos A. Lawrence, a wealthy citizen of Boston, who had always been cognizant of Dr. Morton's labors, a plan was matured, in connection with the medical profession and influential citizens of that city, for raising by private subscription throughout the United States, $100,000 as a national testimonial. An appeal was issued to the patrons of science and the friends of humanity, setting forth the claims of Dr. Morton, and urging the importance of testifying, by pecuniary donations, their obligation to the discoverer of "Practical Anæsthesia." It was numerously signed by the physicians and citizens of Boston, and was responded to by liberal donations. Mr. Lawrence subscribed $1000; the Massachusetts General Hospital, $1000; the Massachusetts Charitable Eye and Ear Infirmary, $500, etc., etc. Dr. Morton subsequently visited New York, and the scheme of a "national testimonial" was heartily endorsed by the medical profession of this city. Large meetings were held at which the claims of Dr. Morton were freely discussed and almost universally conceded. The movement became still more popular when it was alleged on behalf of Dr. Morton that the odious patent was given up and would never again be brought forward. The Governors of the Alms-House voted $1500 to the fund; the New York Hospital $500; and private citizens gave most liberally. Dr. Morton proceeded to Philadelphia in pursuit of the object of raising this fund. What has been his success we are not advised, having heard nothing further from this appeal since his visit to New York, now nearly four years ago. The only intimation of Dr. Morton's movements since that date, is the announcement of the prosecution of the New York Eye and Ear Infirmary for infringement of his patent.

We have thus given a brief outline of the ether controversy, which, in all its details, fills volumes. Practically we may reduce this question to these points:—1. To whom is the world indebted for "practical anæsthesia?" 2. How should the "Public Benefactor" be remunerated? We should settle the first question (not definitively), by yielding to the deliberate judgment of our Boston brethren; and the second, by affirming that Government should liberally reward the discoverer. Against patents in medicine and surgery, the profession have always protested as illiberal, unjust, and unworthy the attention of members of a liberal, humane, and scientific profession. They have never been satisfied with the apologies of Dr. Morton for obtaining a patent in this case, but plausible assurances have tended to allay their prejudices. They will now learn with profound regret, the attempt of Dr. Morton to enforce this patent and obtain damages against public institutions for its infringement. Whatever may be his claims upon society at large for pecuniary reward, he certainly has no claim in equity upon the medical profession, or the public charities of the country. We hope that at the next trial the impressions of Judge Shipman, that the patent is not valid, will be confirmed, and the profession and charitable institutions relieved from prosecutions which will otherwise await them.

INTERESTING TO SURGEONS.

It will be seen, by the following report, that the patent formerly held by Dr. W. T. G. Morton, for the exclusive use of ether in surgical operations, has been finally declared to be "void, and the subject matter not patentable." We are indebted for this decision to a suit of Dr. Morton, in the U. S. District Court, New York, against the New York Eye Infirmary, for infringement of his rights as patentee, and the question is, it is hoped, now forever at rest. The plaintiff called as witnesses Drs. Wood, Griscom, Barker, Parker, Stansbie, Noyes, and Edwards.

Dr. West testified that he used ether rather than chloroform. On being asked how many years he had used it, he said he hardly knew whether he ought to answer the question, as he might implicate himself in a suit, as this appeared to be the beginning of suits against the profession. Mr. Cozzens, the plaintiff's attorney, said they were ready to stipulate on the record that no advantage should be taken hereafter of answers given by any of the witnesses. The witness then said he had always used it since Dr. Morton made it known. He described the mode of its administration, and what kind of cases he used it in, the quantities he used, and what were its effects. He did not use the machine described in the specification of the patent. Being asked what value was now-a-days attached to its use in surgery, he said he did not think language could express it—but by this, he afterward said, he did not mean monetary value, but benefit to the human race.

Dr. Griscom testified to nearly the same things. To the question as to its value, he said it would depend upon circumstances. If the operation was necessary, and could not be performed without ether, it was worth to the individual as much as his eyesight; but he could put no monetary value upon it. As to the proportion of surgical operations in which ether or chloroform was used, he could not say.

Dr. Barker's testimony was to the same effect. He also testified to the general use of ether in surgery, both in New York and Connecticut, where he formerly practised.

Dr. Willard Parker went over nearly the same ground, saying it was of great value to the patient, but no extra charge was made for it by the surgeon; that it was entirely impossible to fix any value upon it, there being no standard to go by. If the thing were wiped out now, and could be brought back again by paying millions, millions would be paid. He further proved, on cross-examination, the general use of the article over the country, and said that Dr. Morton came to him in 1856 or 1857, and brought letters from physicians and surgeons in Boston; that he was aware of the subject, and aware of its being patented; and of course there was a prejudice in the profession against patentees, or having any thing to do with them. Witness proceeded—I had a conversation with Morton about it, and he said that he had abandoned the patent, and was now throwing himself upon the humanity of the world. I then took him cordially by the hand, and introduced him to a large number of gentlemen in the profession; he made a statement at a meeting we had of what he had gone through with, and of his purpose with regard to the patent, and explained about a suit which had been commenced against the Chelsea Hospital; measures were taken by the profession here to raise funds for him; the New York Hospital paid him $500, and Bellevue $1,500; I went down to South street and raised several hundred dollars on the ground that he was a benefactor to the world. This was done on the idea that he had abandoned his patent, otherwise not a thing would have been done.

Re-direct.—I would not, because he was shielding himself under another garb; he had his patent to protect him, and we should have left him to that; don't know whether Bellevue Hospital purchased a license to use it with the $1,500.

Other witnesses testified as to the amount of ether used by defendants; as to the number of cases in which it had been used, no certain testimony could be obtained.

Judge Shipman finally said that the patent had got to be discussed some time or other, and might as well be, before putting in any further testimony. The points as to the validity of the patent were then discussed at length by counsel on both sides. The Judge this morning (Jan. 30th) announced that he had come to the conclusion that the patent was void, and that the subject matter, under the circumstances, was not patentable. He therefore directed the jury to find a verdict for the defendants.—*Boston Med. Journal.*

BRITISH JOURNAL OF DENTAL SCIENCE.

At a recent meeting of the Odontological Society, a paper on the following subject was read by Mr. Tomes, and at its close a lengthy discussion of the subject ensued.

"On Certain Conditions presented by Amalgams used in Filling Faulty Teeth.—The unqualified condemnation of amalgams on the part of some, and the confidence reposed in mercurial fillings by other dental practitioners, is a sufficient indication that the question has not received that amount of investigation which its importance merits. We meet with cases in which teeth filled with amalgam have lasted for fifteen or twenty years, indeed, until with the advanced age of the patient the teeth have loosened and fallen out. But far more numerous are the cases in which the presence of the amalgam fillings have failed to arrest for any considerable time the destruction of the teeth. With opposing opinions and inconclusive results, it is incumbent on those who regard the use of amalgams with unqualified disapprobation to show the grounds upon which their condemnation rests; we should be told why amalgams fail to preserve the teeth into which they are introduced; and it should be clearly pointed out that the conditions necessarily involved in the use of these mercurial compounds are such as must secure an unfavorable result. On the other hand, those who advocate the use of amalgams should be able to point out why the unfortunate so far outnumber the successful cases. Why, in one case, an amalgam filling preserves a tooth for an indefinite time, while in another case the disease is arrested but for a few months. To say that these differences in the results depend upon accidental causes is but to admit that we are unacquainted with the conditions the presence or absence of which will determine in each case the success or failure of the treatment.

"In cases of failure it is not enough to condemn the material used in the treatment, unless it is at the same time shown that the employment of other materials would have led to a successful issue. Dental surgery has arrived at that point when mere opinion, unless supported by clearly stated evidence, cannot be accepted as a guide for practice. To analyze one by one all the conditions attendant upon the operation of plugging a tooth, and those to which the tooth is subsequently exposed, is by no means a simple or an easy task. The recognition of a difficulty is, however, in many cases, the first step toward its solution, and although we may be unable to acquire a perfect knowledge of our subject, yet we may, and no doubt shall, make great advances from the point at which we at present stand. The rate of progress will, I feel sure, be hastened by our devoting ourselves to the investigation of special points, which, after being worked out by individuals, should be brought before this society for free and ample discussion. With this feeling I undertook to prepare for the society a paper upon the physical conditions presented by the different materials used in filling teeth. I did so with the hope of throwing some further light upon the use of amalgams, but more especially with the hope of inducing others to take up, for the purpose of close investigation, this and other points of practice.

"To treat of amalgams satisfactorily, it would be necessary, in the first place, to consider the different amalgams as chemical compounds, both as respects the substances used in compounding each amalgam and the proportions of the several ingredients. I, in common, I believe, with many others, purchase and use materials prepared by Messrs. Ash or those of other makers, without knowing the proportion the incorporated metals bear to each other. Whether definite proportions exercise an important influence in these compounds, in which mercury plays so singularly an important part, I am unable to determine; but the fact that in certain alloys the proportion in which the ingredients are combined will determine whether a chemical combination, or a mere mixture, results, indicates that the question of proportions should be fully investigated.

"The consideration of proportions will involve the investigation of the nature of the process by which the hardening of the compound is effected. It is usual to state that this process is one of crystallization, but I am not aware that any one has shown that crystals are formed. Whether an amalgam in hardening either expands or contracts is also a question of great practical importance, and the character of surface retained by the mass when its induration is complete, cannot be neglected. It is to the investigation of these latter points that I have directed my attention. The experiments instituted have been confined to the amalgams in general use, with the view of ascertaining the merits of well-known compounds, and of making them the basis of comparison in the examination of combinations, which may at a future time come under our notice. But even here, at the very threshold of a very simple inquiry, we are, most of us, met by the difficulty of ignorance. We are, for the most part, dependent for our supplies upon those who prepare amalgams for sale, and who, in the interests of their trade, do not proclaim the formulas they follow. We are, in fact, daily using amalgams, concerning the ingredients of which we have no precise knowledge. To each of these imperfectly known compounds we attach the name of their respective makers—a custom which in itself shows pretty clearly that we are not proceeding upon very scientific principles—that we trust to the knowledge of the compounder, who is unacquainted with the results of practice, rather than to our own knowledge, both for the determination of the ingredients used, and of the relative quantities of the component parts. In conducting the experiments, the results of which I am about to lay before the society, the following plan has been adopted. Slips of ivory have been prepared, the size of each being similar, excepting in a diminished width to the ordinary glass slide used for mounting microscopic preparations. Each ivory slide is perforated through its centre by a perfectly cylindrical hole. When about to be used, the slide is firmly clamped down upon the flattened surface of a block of ivory, by the assistance of which the cylindrical perforation is converted into a cylindrical cavity—having a perfectly flat floor lying at right angles to the walls. On the under surface of the slide several minute angular fissures have been cut into the edge of the wall of the cavity by a very small four-angled file. This expedient has been adopted for the purpose of testing the readiness with which the amalgams used enter minute fissures.

"The amalgam has been introduced with ordinary care, and forced into the experimental slide with a round-headed burnisher sufficiently small to enter with readiness the cavity.

"When the amalgam has perfectly hardened, the clamp is relaxed, and the slide withdrawn from its position on the block of ivory, thereby exposing for examination that portion of the plug which rested upon the floor of the cavity, together with the fissures in the walls produced by the file.

"The amalgams in general use may for convenience be arranged into two groups. Those which are combined with mercury as a preliminary proceeding, the mass being softened by moderate heat, and the excess of mercury squeezed out prior to the introduction of the plastic mass into the tooth; and those which are completed by the addition of the mercury to metallic fillings at the time of use. Of the former kind, I am aware of two varieties only. The one formed by the solution of pure copper in mercury; the other, Sullivan's cement, compounded, it is said, of copper mainly. Each of these have been subjected to the experimental test already described, and with the following results. In test slides Nos. 1 and 2, the amalgam, when it has hardened in contact with the ivory forming the bottom of the cavity, presents a fine granular surface. It has failed to penetrate into fissures extending from the sides of the cavity in the one slide, and in the other it has separated from the wall of the cavity. In neither slide is the cavity fully and entirely filled. The microscope shows that the plug is in neither case perfect. In slide No. 3, the pure copper and mercury were introduced. The process of hardening has not in this case been attended either with the same amount of contraction, or of change of surface, as in the preceding specimens, in which Sullivan's cement was used. Indeed, this specimen exceeds any other I have examined both in respect to the smoothness of surface it preserves, and to the closeness with which, after hardening, it is applied to the surface of the cavity in the ivory slide. In slides Nos. 5 and 6, an American amalgam, sold by Messrs. Jameson, of Glasgow, was employed. This compound has hardened in contact with the ivory, with a very rough, granular surface, and the mass has obviously contracted, so that had the surface been such as when closely applied to the walls of the cavity would have served to exclude the ingress of moisture, the general contraction would have rendered that property useless. In each case the fillings were carefully rubbed with the mercury in a mortar, and the mass when perfectly incorporated was previous to introduction washed with ammonia.

"In preparing slide No. 8, the fillings sold by Messrs. Ash were incorporated with mercury in a mortar, the mass washed in ammonia, and then, after the expression of the superfluous mercury, introduced into the test slide. The result is a plug presenting a fine granular surface where hardened in contact with the ivory, and a considerable amount of separation from the walls of the cavity, the obvious result of contraction.—*The Dental Cosmos.*

(To be continued.)

EDITORIALS AND CUTTINGS.

VULCANITE AND ITS VICTIMS.

III.

In the number of the New York Dental Journal issued in January, 1861, we entered into the case of the American Hard Rubber Co. *vs.* the Dental Profession, with all the zest which may be supposed to invigorate a lively and energetic Thomas Cat, in pursuit of a sleek, fat, edible mouse. And this comparison, if we may be allowed a little vanity on the subject, is the more felicitous, the longer we consider it. The A. H. R. Co. certainly resemble a shrewd and cunning mouse, which has been nibbling at the professional cheese, until smelt out by those at whose expense he has been feeding: they, of course, indignant at being thus tricked, have sent their favorite Cat, the N. Y. D. J., after him, and for more than a year we have been in chase of him. We have followed him close, as he dodged us around corners, or doubled on us in the open road; occasionally we have got near enough to him to take a nip off his tail, to make a hole in his ear, or scatter a little of his fur; but still he has sped on, squeaking villainously. He has gradually lost his robust condition, and is now by no means a tempting morsel to any refined and Epicurean Cat, like ourselves. He has grown thin and sallow, his tired limbs have wasted away and he presents a generally dishevelled and debilitated condition; but the chase which we commenced to avenge the loss of the great Dental Cheese, we have continued, from a determination to bring to book and to condign punishment this hardened old offender. Our chase has, at length, been successful, and we propose to exhibit to our readers the results.

In the same number of the N. Y. D. J. we endeavored to show to our readers the similarity between the movements of the A. H. R. Co· and a theatrical performance. We showed them the manager, the prompter, the call-boys, the audience, the orchestra, and all the other accessories of the stage—traps, flats, green-room, etc.; and we finally concluded by announcing the forthcoming performance of a new comedy.

In our April number, we proceeded to give some information collected by our reporter, who had been around "behind the scenes," and had picked up one or two items of interest. We also replied to some of the insinuations of the organ of the A. H. R. Co., which, true to the shop, quoted Shakspeare at us, and endeavored to scare us with pumpkin-head ghosts, and broomstick hobgoblins.

Finally, in the October number, we were forced to excuse ourselves from continuing the subject, for want of matter, as the new play seemed to hang fire, the star actor, Mr. Toland, not being ready to come to time.

This brings us to the present time; the curtain has risen upon the new play, and presently, in our criticism upon it, we shall proceed to show that they have been performing "Hamlet" without the prince.

To return, we will give a slight sketch of our troubles and difficulties in our pursuit, in the disguise of a cat, of the rascally, old, cheese-nibbling mouse, we mentioned.

In the early stage of our pursuit, we discovered that this mouse was a female mouse and accompanied by a youthful offspring, which our readers will recognize, under the name of "The Question Settled." The animal was healthy-looking, but he had the seeds of hereditary disease in his system, and we very soon squelched him.

Again we travelled on our weary way, through brake and through brier; now springing, as we supposed, upon this tantalizing mouse, who, spurred on by the fear of annihilation, was always able to elude our grasp; now pausing to admire her impudence, as turning full upon us she ventured to beard us to our face, when, what was our surprise to find her again endeavoring to present herself with an heir, which, however, proved to be a miserable abortion, intended to have been born in Jersey, but which never saw the light. Again, undaunted by her mishaps, she toiled before us, just in advance, when with a last effort she produced her third, "The Toland Case." This last mouse we have reserved for the entertainment of our friends, the Profession; thus giving them the affecting narrative of the "Three Blind Mice," who—

> "All ran after the farmer's wife,
> And she cut off their tails with the carving-knife."

We have already amputated the caudal extremities of two of these mousine animals, and we think we can perform a similar kind action in the behalf of our third friend; should they, or any of their successors, trouble us in the future, we shall fall back upon our reserved rights, and summarily decapitate them.

In the November number of the organ of the A. H. R. Co., we find the decision rendered in the case of Henry B. Goodyear, *administrator*, &c., *vs.* John T. Toland, and give it space below, for the benefit of such of our readers as may not be in the habit of reading that interesting sensation quarterly. Inasmuch as this decision was rendered on the 11th day of September, 1861, why was the appearance of the organ delayed nearly two months, *merely* to place it before the profession, when this decision had been in the possession of the Company nearly two months previous to their usual date of publication? We think we can answer our own question satisfactorily, and in so answering it, we propose to throw some additional light upon the movements of the A. H. R. Co. which, we flatter ourselves, will possibly startle the Company slightly, and open the eyes of the profession to the truth of what we have always sought to prove. Our reporter has again been out, and has brought us back so rich a collection of facts, that our only difficulty is in deciding which to present first. It is not generally known to the profession, that some time since a suit was brought by Henry B. Goodyear, *administrator*, against the "New York Gutta-Percha and India-Rubber Vulcanite Co.," for infringement identical with that of the Toland case. In this suit, which has been running for some time, there have been more than two thousand printed pages of evidence given in, and in which the best legal talent of the country has been engaged. This case is to be argued in New York, but it was with the expectation that a decision would have been rendered in it some time since, that the A. H. R. Co. delayed the publication of the November number of their organ. Finding that there was no prospect of such an occurrence, they concluded to publish the Toland case as a substitute, hoping thus to frighten a few more of the dentists into the purchase of rights, before the crisis occurred to which we shall presently refer.

The following we cut from the organ of the A. H. R. Co.:

"TO THE DENTAL PROFESSION.

"We publish in this number the decree of the Circuit Court of the United States for the Southern District of Ohio, in the case of Goodyear *vs.* Toland.

"Our readers will recollect that in the February number of the VULCANITE we stated that the demurrer made by Mr. Toland to the bill of complaint in that case had been argued and overruled; that thereupon his counsel had moved to strike out a part of the bill as irrelevant, and that this motion could not be argued until the fall term of the court. At that term the motion was denied, and Mr. Toland peremptorily ordered by the court to file an answer to the bill by a specified day. This he failed to do, and the annexed decree was entered upon the record of the court:

"HENRY B. GOODYEAR, ADM'R, ETC., *vs.* JOHN T. TOLAND.

"*In Chancery.*

"And now comes the said plaintiff, and it appearing to the Court that the said defendant, though ruled so to do, hath failed so to answer the said Bill of Complaint, the same is by the Court here ordered to be taken as confessed. And, therefore, the Court do find that the said two letters-patent referred to in said Bill, being reissued patents, Nos. 556 and 557 were duly granted and issued to said plaintiff as administrator of said Nelson Goodyear deceased, and that the same were and are in all respects valid, and secure to said plaintiff as such administrator, the exclusive right of making, constructing, using, and vending to others to be used, the said improvements, specified in said letters-patent for the unexpired term of fourteen years, from the 6th of May, 1851. And the Court doth further find, that the said defendant has been engaged in manufacturing and selling large quantities of plates and bases for artificial teeth, and other articles made of the new substance described and secured by said letters patent, in violation of said exclusive right so secured to the plaintiff as aforesaid, and without the license or authority of the plaintiff. Whereupon, it is by the Court here ordered and decreed that the said defendant be, and he is hereby enjoined and forbidden from henceforth, during the continuance of said letters-patent, and during the term thereof yet unexpired, or any further term for which the same may be renewed or extended, from continuing the manufacture or sale of plates and gums for artificial teeth or other articles so made in violation of the said patents or either of them, and that the defendant pay the costs of this suit. And inasmuch as the Court is not now advised of the amount of damages which should be decreed to be paid by said defendant to the plaintiff on account of the said infringements and violations of the said patents, it is ordered that this case be referred to Thomas M. James, as Special Master, to state and return to this Court an account thereof, and this case is for that purpose further continued, and the said Special Master is authorized to call before him and examine under oath the said defendant, and such other witnesses as may be necessary in order to establish the extent of said damages.

"United States of America, Southern District of Ohio, *ss.*

"I, John McLean, Clerk of the Circuit Court of the United States, within and for the Seventh Circuit and Southern District of Ohio, do hereby certify the foregoing to be a true and accurate copy of a Decree in Chancery in the case of Henry B. Goodyear, adm'r., etc., *vs.*

John T. Toland, rendered on the 11th day of September, A. D. 1861, as the same remains upon the Journal of said Court in my office.

"In testimony whereof I have hereunto set my hand and affixed the seal of said Court at Cincinnati, this 25th day of [L. S.] September, A. D. 1861, and in the 86th year of the Independence of the United States of America.

"Attest: JOHN MCLEAN, *Clerk, etc.*"

Here we have the new comedy; let us analyze it a little. A glance at the prefatory remarks of our friend, the editor, will present one point of interest to the profession. It will be seen that throughout this case, Mr. Toland never put in an answer to the complaints made by the so-called patentees; while the decision itself, upon examination, will be found to state that the judgment is taken by default. This, of course, gives a much weaker case for the A. H. R. Co. than either the "Roberts" or the "Dieffenbach" cases, which were both compromised. In point of law, this judgment decides nothing as to the validity of the patent held by the A. H. R. Co. more than did the cases above mentioned; and neither of these three cases ever has, or ever can, enable the A. H. R. Co. to put an injunction upon any other party, whom they may accuse of infringing upon their patent.

And finally, in order to publicly amputate the caudal extremity of this last loud-squeaking mouse, to divest him of that ornament forever, with our editorial carving-knife, we have only to repeat our assertion made in the N. Y. D. J. for January, 1861, in reference to the "Roberts" case (we only change the name):

"What we desire to show, and what we have shown, is simply this, that *as far as the case of the A. H. R. Co. vs. Toland is concerned*, the profession have a perfect right to vulcanize their work to all eternity, without buying an office-right, or having the slightest connection with the A. H. R. Co., their agents, trumpeters, engineers, or fuglemen."

It happens that our reporter, besides being an excellent dramatic critic, is also an expert lawyer, and as the "play" business has rather fizzled out, he has devoted himself to some of the legal points of this question, and with considerable success, as we shall proceed to show.

What will our readers think, when we inform them that this "American Hard Rubber Co.," which has so fiercely and determinedly waged war upon the profession as infringers upon their patent, are themselves to be called upon the stand to answer to a charge of infringement upon the patent of Austin G. Day? We have little doubt but that this statement will somewhat astonish those of the profession who have, in spite of our many warnings, permitted themselves to be gulled by this bugaboo Company, and such will begin to tremble for the issue of this suit, which may result in extracting from their pockets another fifty or hundred dollars, to be paid to other parties.

This statement will possibly explain to our readers our reasons for taking the position, which we have occupied for the past year, in reference to "Vulcanite and its Victims." On an examination of the two Vulcanite patents, we were impressed with grave doubts as to the validity of the right under which the A. H. R. Co. were operating, and we therefore felt it our duty to warn the profession as far as we could, without doing injustice to any one. Later information has placed us in possession of facts which confirm us in our opinion, and we therefore hesitate no longer to place them before the profession.

We may give one fact as inferential evidence of the truth of our statement, which is furnished by the A. H. R. Co., in the last number of their organ. Here it is:

"Hereafter price of Office-Rights will be,

In towns below 5,000 inhabitants, . . .	$50 00
" " over " " . . .	75 00

Terms: Cash on Delivery of the *License Papers*."

This announcement coming so immediately after the Toland case, which the A. H. R. Co. pretend to consider a great victory, and which one would suppose, would have made them stiffer than ever as to price, bears this meaning on its face: that the A. H. R. Co., knowing the precarious position in which they stand, first frighten the dentists by a false assumption, and then reduce their terms, in order to bag as much game as possible, by both driving and coaxing, before the "crisis," to which we referred above, shall arrive. It will be seen, *en passant*, that the terms are "CASH ON DELIVERY;" we leave our readers to follow out the inference.

Considering all these circumstances, we shall proceed to give the profession the benefit of some points of law which will interest them, and may finally induce even the most timid from throwing away their money needlessly. These points are as follows;

1st. All dentists have a perfect right to vulcanize their own work, all decisions in infringement suits thus far obtained, to the contrary notwithstanding.

2d. By reference to the DAY patent, which we publish in this number, or the patents of Thomas and Charles Hancock, of England, it will be seen that dentists need not confine themselves to the Goodyear patent in vulcanizing.

3d. In order to obtain judgment against any party infringing on any of the rubber or gutta-percha patents, it is necessary that a witness should be produced, who has not only *seen* the vulcanizing of a specified piece, to be produced in evidence, but who also can swear that the component parts of the material, and the means used for vulcanizing it are identical with those specified in the patent infringed upon. There is not in existence any means by which the composition or method of vulcanizing of these materials can be discovered, after the process is finished.

The 1st and 2d of these "points" we put in as rejoinders to the A. H. R. Co. circulars of "The Question Settled," and the "Toland Decision." The 3d is, we think, an effectual stop to the system of espionage which these gentlemen have seen fit to adopt, aud which would disgrace any well-bred Botany Bay convict. We refer to the following from their organ :

"We would respectfully invite all our licensees to report to us all cases of infringements which may come within their knowledge; and we promise them that such cases shall meet with prompt attention, if not settled before the date above mentioned."

This is an example of the "sneaking" process adopted by this Company, but we cannot bring ourselves to believe that our profession contains men contemptible enough to aid them in their nefarious project. The following letter, which has been furnished us by one of our correspondents, is an excellent example of the "bullying" plan, as used after the decision of the Roberts case, when this Company had no *blatant* organ to do their dirty work for them. We presume similar missives may possibly find their way through the mail after the Toland decision, but we flatter ourselves we have rather taken the edge off them:

"New York, *June* 21, 1860.

"Sir:—I have proof that you are infringing the Goodyear patents, in their application to dental purposes.

"These patents are owned by the American Hard Rubber Company. I am instructed to commence legal proceedings against you, unless you take a license to use these patents; the price of such license you will find in the accompanying circular.

"Your immediate attention to this will save you expense.

"Yours, &c.,
"Geo. D. Sargeant,
"*Att'y for the American Hard Rubber Co.*

"P. F. Stodard,
"Prattsburgh,
"Steuben County, N. Y."

We remember an anecdote of Mr. Booth the elder tragedian, who when once filling an engagement at the Park Theatre, in this city, was one night missing from the theatre, just before the curtain rose. The manager went before the audience and apologized, and emissaries were sent over the city to look him up. Mr. Booth was at length discovered, mounted upon a barrel, in Chatham Square, delivering a temperance lecture, to a large and enthusiastic auditory, and was brought back to the theatre in triumph. Something like this condition of things was discovered by our reporter, when he appeared in Cincinnati, in the theatre of the A. H. R. Co., pending the performance of the new comedy, with Mr. Toland as star actor. Mr. Toland, like his illustrious prototype, turned up missing, but, unlike him, he didn't come back; he was engaged in a more noble occupation than defending patent-infringement suits, defending his country and his flag as a Lieutenant-Colonel in the army of the Republic. Notwithstanding his absence, the managers persisted in playing their new "Hamlet" without the Dane, and now have the barefaced impudence to tell their audience—the profession—that they have given the whole play, as originally announced on the bills. We think the audience, as is usual in such cases, ought to demand their money at the doors, since in place of a final judgment, they have only the ancient, inevitable "nigger in the fence," stirred up by Toland long ago.

But modesty and veracity are not virtues peculiar to the gentlemen of the A. H. R. Co.; we were, therefore, not surprised, when we learned their movements, after the decision mentioned above. They thought they were working in the dark, but the editorial profession is Briareus-armed and Argus-eyed, and they reckoned without their host. Gathered together in the silent night, burning the midnight gas, might have been seen the assembled cohorts, the gathered clans, of the A. H. R. Co., called together by their chief in council, to discuss matters of grave import. They thought no eye was upon them, and as they rapidly folded the Toland decision, preparatory to sending them upon their fiery path, "they laughed Ha! Ha! and they quaffed, Ha! Ha!" with demoniac glee and fiendish exultation, as they counted, in imagination, the dollars that should come pouring into their coffers in the path of those meteor-like missives.

The wind outside howled and wailed; the window-shutters banged; shrieking cats came like ghosts about the building; within, the light gleamed fitfully upon the Rembrandt shadows that played upon the patriarchal visage of the chieftain and manager: wrapped in his plaid, he sat and mused upon the midnight foray,—that is, he footed up in his mind the number of licenses he would probably sell before the 1st of February. By his side, his taper fingers gracefully dabbling in the placid paste-pot, his classic nose supporting his auriferous spectacles, sat the fugleman; near by stood the drummer, tapping the head of his cane against a specimen of vulcanite, which he carries about him as a sample; he occasionally flashed across the assemblage sparkling witticisms and effervescing *jeux d'esprit*. Sitting by his desk was the prompter. Occasionally the shrill voice of the chieftain might have been heard, vainly endeavoring to make him hear some inquiry, in reference to the tangled mazes of the Company's accounts; or demanding the name of some unhappy licensee, whose notes had gone to protest (not by any means an uncommon thing, by the way). Near the chieftain, on heither 'and, stood the two 'opes of 'is 'ouse and 'eart, his youthful heirs. Last of all, the latest acquisition of the mighty band, stood the prophet of the West, the transcendental philosopher, whose flowing locks shrouded, in rich luxuriance of growth, his manly shoulders; could it be that he would soil his fingers with the paste-pot? Alas, it was too true! skilfully he folded, majestically he threw to one side, the incendiary pamphlets. Mentor of metaphysicians, how hast thou fallen! And ever and anon strange and mysterious words sped through his seething lips; the sounds reached us, but the meaning did not, until at length, gathering himself together for a mighty effort, he hurled forth his anathema against the enemies of his master, in these burning words: "Come down with your hundred dollars, ye varmints, when ye git this 'ere, or ye'll be wiped out." We heard no more, the horror of the scene was too much for us, and we fled the spot.

It is a curious fact, that the A. H. R. Co. have not perfect confidence in their own agent. We find this exemplified in the fact, that they cannot trust him to act as their mouth-piece, but are obliged themselves to concoct a statement for the pages of their organ, for which they take the responsibility.

We would like to criticize the article on the first page of the organ for November, but really it is beneath criticism. It is nothing but a dry succession of dull repetitions from former articles, occasionally sprinkled with garbled and clipped selections from Toland, or the N. Y. D. J. There is one paragraph, however, which we will quote, as a specimen of one kind of writing, as practised by the A. H. R. Co. Thus it runs:

"In view of the self-assured and even defiant tone maintained by Mr. Toland throughout his warfare upon us and the Goodyear patents, and of his oft-repeated assurances that he 'could be neither bought nor frightened, but should defend the suit against him to the utmost limit of the law, upon principles of duty and hatred to oppression.' We think he has played upon us, and the profession generally, a most shabby trick. The course he has taken confirms us in the opinion that *he never from the first intended to defend the suit*, and that his whole conduct in connection with the use of Vulcanite has been influenced solely by the consideration of making the *largest possible profits on his trade*, regardless of the rights of others, and reckless of the perplexities and pecuniary difficulties in which he might involve his patrons."

This " whine" from the rich monopoly, is about as ludicrous as any thing we have seen lately. It is in the style of some weak-minded countryman, who has been "done" by the patent-safe game. Their belief that they have been "sold," is the most refreshing thing in the world. It is only necessary, however, to know John T. Toland to be certain, that had not the present condition of things arisen in this country, driving from his mind all memory of more petty disputes, he would have fought the A. H. R. Co. to the last dollar, while he should not have wanted for friends to back him, notwithstanding the sneers of the Vulcanite Victimizers.

And now one word to our kind friend, the Manager of the Apocryphal Theatre we have described; the Chieftain of the Clan; the Editor of the "organ" of the A. H. R. Co. It may be that in the course which we have pursued in this matter, we have possibly not altogether obtained his approval, and that we may have inadvertently trodden upon one or more of his pet corns; in case that we have done this, and desiring to alleviate as far as in our power, any pain which we may have caused him, we propose to do him personally full and entire justice in the present article.

In order to render the theme more amusing to our readers, we have taken the liberty of presenting the movements of the A. H. R. Co. in the form of a play; now plays, as is well-known, are always open to criticism, and it is the privilege and duty of the journalist to place their salient points prominently before the public. In thus criticising it is sometimes necessary to be severe and harsh, but it is not necessary to be personal or vindictive.

We would therefore assert in justice to the manager of this theatre, that his part has been admirably and creditably performed. He has shown that the "laborer is worthy of his hire," and we sincerely believe that he has richly earned the two thousand dollars per annum which we understand he receives for acting as "scarecrow" for the A. H. R. Co. He has certainly scared the poor professional crows out of about $40,000 of their hard-earned gains, and should his latest dodge succeed, he will remind us of the scarecrow mentioned in history, which was so infernally ugly, that he not only frightened all the crows in the neighborhood almost into fits, but frightened some so that they *brought back the corn they had stolen a week before.*

The sagacity and shrewdness which, as manager, this gentleman has displayed throughout his course, culminate in the admirable manner in which he has placed the late comedy upon the stage, giving its worthless tinsel and loud-sounding brass all the appearance of being genuine thunder and lightning. In calling to his aid such sterling ability as presents itself in the persons of his "fugleman," "drummer," "long-haired prophet," etc., he has exhibited a knowledge of human nature, exceedingly creditable to one of his years and experience, and presents evidence of ability only to be fully appreciated by an examination of his list of office-rights, amounting to $40,000, gulled out of the confiding and unsuspecting members of the profession.

Our friend, in his editorial capacity, informs the profession, in the last number of the "organ" of the A. H. R. Co., that "the opposition to the Goodyear patents has finally dwindled down to a very insignificant point;" which point is the N. Y. D. J. He also informs the world that the weapons we wield are "so impotent, and so dull withal, that they fall harmless, except perhaps the recoil may do some little harm."

Our friend makes a slight error of language when he says the "opposition has dwindled;" it is now only *centralized* in the N. Y. D. J.; for like a good general, it does not believe in scattering its army, but consolidates all its forces against the enemy's weakest point. As to our weapons being "*impotent*, and dull withal," we need only to refer our readers to the list of licensees published in the "organ;"—previous to the publication of our first article on "Vulcanite and its Victims," the number was 336; a year has passed, and there have been added just forty-three (43)—comment is unnecessary.

Our friend, the editor, proceeds to inform the profession, that the real cause of the course pursued by those who have opposed the "Vulcanite Monopoly" has been simply a desire to make money. Now if he will add to this sapient assertion, the mode by which we, for instance, could make any money out of such a course, we shall feel materially indebted to him, as, thus far, we have not seen it in that light. It is the impression of this editor, that our conduct will recoil upon our own heads; that the profession will not thank us for our action in the premises, but, on the contrary, will appreciate our true motives, which are supposed to be a desire to dupe the profession into a course which will only react against their own interests.

We ask no thanks from the profession, and no favors, because we have exerted our influence to prevent what we have always considered a great and grievous wrong perpetrated against them. On the contrary, we have often thought that the bland and plausible manner of the shrewd manager and brilliant editor aforesaid, might succeed in making some members of the profession believe that we were really only luring them on to their destruction, and following an insincere course for our own emolument. In that way, and by those means, we have thought that he might have succeeded in injuring the business of the proprietor of this Journal, and thus have satisfied his petty spite and malice, although it would not enable him to ward off the blows we should endeavor to inflict upon him, so long as he should stand forth the agent and upholder of this wicked system. But all these considerations have never deterred us from pursuing the course we believe to be just and right, both for ourselves and for the profession. We hope that all who love and trust this stage-manager and his party-colored company, sufficient to present them with $100, will by all means give it to them, as we think it more than probable that before long the A. H. R. Co. will have need of a few hundred to keep their own heads above water; but such an offering could be only a free-will gift, and ought only to be received as such, and not claimed as a right in the impudent manner with which this Company receives it. But we think there are few who have witnessed the performance of this play through our glasses who will have become so enamored of the manager as to present him with $100, for a season-ticket, now that the farce is played out, and the season so nearly over.

(To be continued.)

TOLAND IN NEW YORK.

Since writing our article on "Vulcanite and its Victims," Colonel John T. Toland has made us a visit fresh from the seat of war (in Western Virginia).

We had one of those old-fashioned visits that he was wont to make before he was promoted, and we could only appreciate the fact that we were talking with a live Colonel by occasionally taking a peep at the stripes upon his pantaloons and shoulders, so familiar and natural was his jolly face, although for months he had been hunting rebels in Virginia.

He informs us that he stopped in Cincinnati long enough to put in his answer to the A. H. R. Co., opening up the whole case of Goodyear *versus* Toland, and promises to give us a play in which the star actor will not be away, as his engagement with Uncle Sam will soon be played out, inasmuch as his audience, the rebels, was about leaving through the back-door, thus giving him an opportunity to devote his whole energies to the A. H. R. Co.

READING IN THE DENTAL PROFESSION.

There is probably no profession, whose members engage themselves so little in professional reading, as that of dentistry.

We make this assertion boldly, and shall proceed to substantiate it, at least inferentially, to the best of our knowledge and belief.

The profession of dentistry is originally learned almost entirely from practice. The young apprentice, in the country-town or village, stands daily by the side of his employer, and following with eye and ear, obtains his first insight into the mysteries of his calling. He practices only that of which he obtains a knowledge, ocularly or orally ; he sees but few books upon the subject of dentistry, for the reason that his employer learned his profession in the same manner as himself, and grew up to a belief that the world, in a dental point of view, had been at a stand-still ever since. The young man finishes his apprenticeship, and goes out into the world with this idea instilled into his mind, and the result is, that he firmly believes that dentistry is a trade like carpentry, rather than a science, to be obtained chiefly from the recorded experiences of wise practitioners.

Now it is undoubtedly true, that it is within our generation that dentistry has emerged into a science and an art, but it is for the present that we are writing, and the present generation must know that the recorded experiences upon this subject, are a library in themselves.

The difference between our profession and all others on this point is so palpable, that it never fails to strike even a layman as something strange. You enter the dwelling of a minister, or the office of a lawyer, or physician, and you find yourself surrounded with books—the scientific autobiography of the past. To be sure, it may be answered that these professions are more ancient than ours, and it is true as far as progress is concerned ; but that only applies to our forefathers, and can be no excuse for those who have opportunities which they neglect.

All the true wisdom of this world is contained in books, and all the results of dental practice, down to our own day, may be found in books if properly searched for.

Who are those men in the profession who have reached the highest rank and position ? They will be found to be those who have read, and those who have written. We could give many names to support this assertion, but the selection might seem invidious, and we will leave it to each one to make it for himself. The literature of dentistry may seem at first thought, to be meagre; but we can assure our readers, that on the contrary, it is exceedingly rich, when considered in connection with its youth.

There are historical works, in which the progress of the profession may be traced from the earliest period to the present time. There are biographies, where we may learn the trials, struggles, successes and defeats of men who have toiled and labored, in the same path, and the same pursuit as ourselves; there are text-books, wherein the learner may obtain the first principles of his calling, and more advanced guides which contain the observations of the wisest teachers. There are, too, books which present the most complicated cases, with their treatment, and illustrate the most remarkable phases of dental disease and facial deformity. So that the earnest reader may begin at the first round of the ladder, and trace his profession to its present highest condition of success and prosperity. Lastly, there are the current periodicals,—the instruments that photograph the passing currents of dental originality, transient or permanent—and lay them before us, monthly or quarterly, or semi-annually, holding up to us a mirror wherein we may see reflected the thoughts and acts of the workers and thinkers of our profession.

But many will say, "We cannot afford to own a library, and if we had one, we could not spare the time to read it." Now there are not any who cannot afford to keep *au courant* with the doings of their own day; in fact, there are none who can afford to remain in ignorance of them.

As for time, suppose a dentist were to devote half an hour *per diem* to reading matters connected with his profession; in one year it would amount to thirteen working days—sufficient time to read all the periodicals published in the country. Possibly, in so reading, he might meet with much trash, but he might also meet with one article which would richly repay him for all his time and all his trouble. The application of a single new invention, improvement, or original idea might so change his whole course of practice as to inure materially to his benefit. And one cannot make a practice of so reading the periodicals of the day without deriving benefits of some sort from them.

But, it will be asked, by what right do we accuse the dental profession of not reading? We reply, that the evidence of the truth of our assertion may be found recorded in the letters received at any of our dental depots, or by the publishers of the dental periodicals throughout the country. Those who read acquire mechanically the habit of writing properly, and of expressing themselves grammatically in good language, while it is a notorious fact that a large majority of the profession write ungrammatically, with false orthography, and no punctuation whatever. If it were merely to educate the profession up to its highest standard, reading would be a duty; but since it would also give them improved facilities for increasing their business, it does seem strange that they should neglect it.

The true cause for there being so little reading in the profession is that there is little industry. There are many dentists who work night and day, are always to be found at their posts, and always have an ample amount of patronage; and in nine cases out of ten they will be found to be those who are the best read. But a large number are only to be found in their offices from ten to three, and then their time is too much occupied to even do their work well, and, of course, leaves them no leisure for reading. If such dentists should make it a habit to be in their offices ten or twelve hours daily, they would find that not only was their work done much better, their patronage increased, but also that they would have ample leisure for storing their minds with all the improvements and discoveries appertaining to their profession. But a dentist should not be satisfied with acquiring information alone; he should be equally ready to dispense it. If he makes some discovery, or new application, or invention it should be his pride to spread the knowledge of its usefulness throughout the profession. How easy it is to write a short description of the novelty, whatever it may be, and send it to the editor of the nearest periodical, who, if it is really useful and desirable, will be only too glad to make it public; thus the DENTAL JOURNAL becomes a medium of intercommunication in the profession, giving to the whole the benefit of the wisdom of each. It may be thought that in thus advocating the extension of reading in the profession, we are, after all, only puffing our publication; but the truth is we only desire that the dentists shall accustom themselves to reading *some* periodical, and are perfectly willing to let the selection rest with themselves, leaving the New York Dental Journal to stand or fall on its own merits. Undoubtedly, in the case of a general dissemination of a taste for reading among the members of the dental profession, we might come in ultimately for two or three new subscribers; but the pecuniary emolument arising therefrom would not probably pay for printing this article, so we think the charge of self-interest falls to the ground by its own weight.

We have at heart the true interests of the profession, as we understand them; and we think every issue of the Journal contains evidence of the justness of our intentions; and when we urge the profession to read more, it is because we believe such a course will tend to elevate them both socially and professionally, and will also largely increase their facilities for working properly, and thus increase their patronage and consequent success in life.

One more proof of our assertion we wish to add, before closing this article, and to which every editor of a dental periodical can bear witness. There is hardly a day passes over our head that we do not receive letters inquiring about some improvement, or some new discovery in the dental practice, which has, in all probability, been published and republished in all the dental journals in this country and Europe; and, to cap the climax, along comes a letter of inquiry about some subject upon which we had spent hours racking our brain in trying to make plain to those who choose to read our articles, and which we had taken pains to publish and place before the profession. Had these person's been in the habit of taking a dental journal, and not been content in taking it only, but spent time enough to read it, they might have spared the unfortunate editor from a repetition of what he had written, and saved themselves the shame of exposure. We say this in all kindness, not meaning to dissuade any one from writing and inquiring about what they are not familiar with, as we are always happy to give all information in our power that will tend to promote the good of the profession, or enlighten or improve any individual member; and we are willing at all times to spend a reasonable amount of our time in replying to letters, as we feel that there may be a possibility of giving some information that may result in the alleviation of pain to some human being, and because it shows that there is a disposition to inquiry upon subjects that they have not had an opportunity to become acquainted with, and a determination not to proceed in an operation in which doubt may exist as to the final result. But would it not be well for such dentists to spend a few dollars for a dental journal, besides the postage stamp that must be used in correspondence? How often have we been pained to hear dentists when asked if they take a dental journal, reply that they do not, for the reason that they are a humbug, there is nothing new in them, and in fact they know more than all the books on the subject of dentistry could teach. We have a case in point. A young man came into our editorial sanctum one day, and after conversing with him a short time we found where he hailed from, with whom he had studied his profession, and what his opportunities had been for acquiring his knowledge. As he rose to leave us we asked him if he took any dental journal, and if not, whether we should have him added to our list of subscribers. He at once informed us that he knew all that was necessary to be known and that he could learn nothing from a dental journal! We made him a present of one, and begged him to read a few pages. We said to ourselves as he departed, "where ignorance is bliss 'tis folly to be wise." Happening to know his teacher, and having had an opportunity of learning the extent of his library, which consisted of Harris's Dictionary of Dental Science and Operative Dentistry and one or two dental journals, besides the NEW YORK DENTAL JOURNAL, to which he subscribed one year, upon condition that we would let him have it for one dollar and fifty cents, or fifty cents off for cash, we concluded he had imbibed more of the smallness of his teacher than that knowledge of the dental art that this day of enlightenment requires of all who undertake its grave responsibilities.

We could only congratulate ourselves that we were not his patient, and pity all who were so unfortunate as to fall into his hands. Thank God, for the sake of humanity, that such cases are becoming less and less common. The people read, if the dentist does not; and they are becoming so familiar with dentistry and its importance that these ignorant machines are forced to read and understand, or starve and quit the profession, as the public will not patronize any except they be capable, faithful, and honest.

Again, we have those who we know read, from the fact that they have a fine practice. They subscribe for not one but all the works that are published that can throw any light upon the profession, or that will improve the mental powers and qualify them not only as dentists, but as gentlemen of refinement and culture, which is a qualification that no dentist can afford to be without; and, for all these publications, they appreciate the efforts of the editors and publishers, and will insist upon paying their subscriptions in advance, well knowing that it requires money to place these publications in their hands and they are ready and willing to bear their part of the burthen. They also insist upon writing and placing upon record their experience, for the benefit of those who take the trouble to peruse what they write. To such men the world owes much of its progress in our young profession, (young, comparatively speaking), and to these men all look with respect, and wonder why or how they should be so much superior to others—*the secret is, they read!*

THE VEXED QUESTION; OR, WHO FIRST FILLED NERVE-CAVITIES.

In our intercourse with the dental profession, we have often heard various of its members claim for themselves the credit of having been the first to treat the nerve-cavity, in diseased or ulcerated teeth. In the discussions of our dental societies, which we have often read and heard, it would appear that all the knowledge of dentistry, which has ever appeared in the world, has been concentrated in the profession of the present generation, and that those who practised forty or fifty years ago, knew nothing of their calling, and especially in regard to the treatment of nerve-cavities. How often do we hear young men, who have only practised dentistry for a few months, or, at most, a few years, declare with all sincerity, that they have filled a nerve-cavity, or treated an ulcerated tooth, in a better manner than has ever been done before, with something entirely original and novel in the process. With the very barefacedness of the assertion, one almost persuades himself, that possibly these wiseacres are as wonderful as they assert themselves, and perhaps have really discovered some great and new process or mode of operating. We sometimes feel, while listening to these remarkable men, that our seventeen years' experience in the profession, has been a useless and profitless waste of time, when such boasters can perform all the most difficult and delicate operations known to our profession, in less time and with greater skill than ever before. Yet we have thought too, that if they could be permitted to examine these wonderful cases thirty or forty years later, and find them bearing the test of time, then would be the proper occasion for self-exaltation and pride in their own skill and knowledge. Or, if the operator has, perchance, gone to his last resting-place, his work, like the good man's deeds, should live after him, to be praised by future generations, and admired and emulated by such of the profession as should come in contact with it, being, in fact, a monument to his memory, lasting as the hills; we might then believe that the profession of dentistry is progressing as rapidly as these gentlemen would have us think. This conceit and self-praise for what we do, proves but little; time, which tests all things, must prove our work. And it is in this manner that we can now tell which of the many honorable practitioners who have gone before us, were faithful to their trusts, and performed all operations, and did all their work through life, in accordance with that integrity which ought to actuate every dentist throughout the world; for upon the shoulders of our profession rests the responsibility of the proper preservation of those organs, so essential to the health and beauty of our fellow-beings.

We are satisfied that dentists who lived up to these great requirements, were in existence as hearty, honest, practical workers, before we were born, and in advance too of the important lives of many in the profession, who think that no one ever performed his duties properly as a dentist, until they commenced practice. We are sure of this, from the fact, that we have often met with the work of these men, of half a century back, and always found it to prove them, what we had always believed them to be, far in advance, as meritorious operators, of our young and self-sufficient friends of the present period.

A short time since we were called upon by a lady, who had had the misfortune to break off the right central incisor; the root appearing good, we advised her to have it replaced by a pivot tooth. A small portion of the tooth projected above the gum, with an old filling in it; we excised the tooth with the cutting-forceps to the edge of the gum, and discovered that the nerve-cavity was filled, and had been drilled out with an instrument about the size of the drill we wished to use for the pivot-hole. We drilled out the filling as far as it was necessary for the pivot to go, but found we had not removed all the filling. It was evidently filled to the apex, and in such good condition as to at once determine us to leave filling at the apex, and proceed to insert the tooth, supposing it had been lately treated by one of our modern dentists, who claim to be the first who ever treated teeth in this manner. We inquired who had performed the operation, as we always like to know the names of those dentists who, we are convinced by ocular proof, have been faithful to their work. The lady informed us that the tooth was filled by Dr. Hudson, of Philadelphia, when she was a girl, only seventeen or eighteen years old. A central incisor, by the side of this tooth, had been filled at the same time, having a large cavity on either side, and was in as good a state of preservation, as when the operation was first performed.

How long ago that tooth was filled, we are unable to state with absolute correctness. We questioned the lady as closely as we could, without asking her age, out and out, but could only learn that she was afterward married, and now has children, twenty to twenty-five years of age, so that the age of the filling could not be much less than thirty years.

The lady gave us a graphic description of the manner in which this operation was performed, which will doubtless interest some of our "original" nerve-cavity dentists. The doctor had a reputation of being very high in his charges, but also of being a very good operator.

Her parents, believing that what was worth doing at all was worth doing well, and on account of her youth, desiring that she should have a permanent operation performed, concluded to send her to him. When he came to this tooth, and found it was decayed to the nerve, he informed her that, in order to save it, he should have to inflict considerable pain upon her, and she must be a brave girl, and bear it without flinching. He then heated a small instrument in a little lamp, and in an instant thrust it up the nerve-cavity. We will leave our readers to imagine her description of her feelings, while this instrument was doing its work. The dentist then proceeded to drill out the cavity and fill in the gold; the lady said it seemed as though it went up to the top of her head, and perhaps it did, but we only followed it the length of a pivot.

It is refreshing to meet with such cases occasionally, and makes us more hopeful of our own practice, over which many of us have spent hours of toil, between doubt and fear as to the result. It also makes us feel our own ignorance, and the ignorance of those who suppose that all dentists who are now dead and gone knew less of their profession than we.

GOLD FOIL.

We are glad to see the spirit of improvement manifested by the manufacturers of Gold Foil. For years it seemed as though progress in the production of this article was beyond human power. Dentists had become accustomed to using such as the manufacturers chose to put in the market, whether it was good or not. Many dentists could not tell the difference, and those that could, used it as a matter of course, as no better could be obtained. At length the profession was startled by the grand discovery of A. J. Watts' (formerly of Utica, but now of this city), celebrated Sponge and Crystal Gold Foil. This awakened our manufacturers to the importance of producing the very best article that pure gold could make, and we are happy to see the great improvement that has been made of late by all the manufacturers of this article. Every dentist who fills teeth is well aware of the fact that much time and labor spent on filling a tooth with a poor foil will often prove a failure, whereas one half the trouble of introducing a good foil would permanently secure the tooth from further decay. Dentists are waking up to the importance of this subject, and will have the best that can be produced, and the manufacturers are determined to spare no pains in giving it to them. We have often used books of foil in which we would find some leaves work as well as we could wish, and others would be very troublesome. We have often called attention to this fact, and asked if it could not be remedied. We see that much attention has been paid to this subject, which promises another improvement so much desired by the profession. The experiments of late made by A. J. Watts in the annealing process would seem to have proved a success, if we could judge by what we have been using lately and what those of our customers say whom we have supplied with it.

We think that in a short time a foil will be produced that will work so evenly that there can be little room for complaint upon the part of the dentist.

TO THE PROFESSION.

On the first of May we will remove our Dental Depot and Teeth Manufactory to No. 691 Broadway, between Amity and Fourth Sts., and one block above our present location. All Communications to the New York Dental Journal or orders for Dental Materials must be directed to W. B. Roberts, Dental Depot, 691 Broadway, after the first of May, when they will meet with prompt attention.

We shall enlarge our stock of goods so as to enable dentists to procure all articles of the very best quality desired, at satisfactory prices. We shall put our materials at war prices, as all kinds of business is being done upon that basis, and we believe in letting our brethren in the profession share with others, knowing as we do that dentists as a class (if faithful to their patrons), earn every dollar they receive by the hardest kind of labor. By judicious purchases, in a few years they would be able to lay aside quite a sum saved in buying dental materials.

W. B. ROBERTS,
No. 691 Broadway.

IMPORTANCE OF THE POSITION OF ANIMALS UNDER THE EFFECTS OF ETHER.—Dr. C. T. Jackson urges (*Boston Med. and Surg. Journal*, Jan. 16, 1862), the importance of position in the administration of anæsthetics. He states that in conversation with Dr. A. B. Wilton, a very intelligent Veterinary Surgeon, of Dorchester, the latter stated "that if a horse is etherized and laid on his back, with his nose up, he will certainly die, owing to the falling back of the tongue, and the consequent pressing down of the epiglottis, so as to produce suffocation." He mentioned four instances, in which he had witnessed the death of horses, during the operation of castration, from the effects of ether and the above-named position. His experience with ether had also proved that death from it never takes place if the horse is laid on his side, with his nose horizontal. His experience has also been extended to the etherization of cows, particularly in cases where mechanical aid was required in removal of the calf, and he has never lost one of them from the effects of ether. When he has had occasion to kill useless horses or dogs, he has made use of ether, aided by the position named, and he says that they die easily, without a struggle—asphyxia resulting from closing of the glottis during the anæsthetic state. These facts corroborate those observed on the human subject by Dr. Petrie, of Liverpool.

NEW METHOD OF ADMINISTERING CHLOROFORM.—At a recent meeting of the obstetrical Society, Dr. Simpson described a plan of administering chloroform, which he has now adopted in preference to that at present in use here. The present mode is to fold up a handkerchief and pour into the hollow a quantity of chloroform, and then hold it at some distance from the face, so as to admit of atmospheric air, being inhaled along with the vapor. The new plan is to lay a single layer of handkerchief over the face, and let the chloroform fall on it drop by drop. The advantages are these: 1. That there is less danger to the patient from the smaller quantity applied at a time. 2. that anæsthesia is more speedily produced. 3. That the quantity of chloroform required is less. Various gentlemen who had made trial of the plan confirmed the value of this process; and Dr. Young, in particular stated that he had kept a patient narcotized for ten hours with two ounces and a half of chloroform.—*British Med. Journal.*

LOCAL ANÆSTHESIA.—Dr. Fournier has addressed to the Academy of Sciences a paper on the subject of Local Anæsthesia, and details a new process for its production, which is called "Chloracetization." His method for producing local insensibility to pain is that of exposing the part to be acted on to the fumes of a mixture of acetic acid and chloroform. "If," he says, "in a room, the temperature of which is upwards of 63° Fahr., the mouth of a thin glass bottle, half filled with a mixture composed of equal parts of pure crystallizable acetic acid and chloroform, be exactly applied to a clean and healthy skin, not deprived of its epidermis, and if this phial be constantly maintained at the temperature of the hand, complete anæsthesia of the part included by the orifice of the bottle will be attained." M. Fournier proposes to utilize this discovery for surgical purposes by directing the vapors of the chloro-acetic compound upon the parts to be rendered insensible to pain by means of a retort, the rest of the limb being protected by diachylon plaster from the benumbing action of the anodyne emanations; and suggests the employment of his method in those cases where general anæsthesia may be deemed inadmissible.—*Paris Correspondent of the Lancet.*

THE CONGRESS OF GERMAN DENTISTS.—The "Central Union" of German Dentists, which was established two years ago, at Berlin, held its third annual meeting in Dresden, at the end of August. Professor Heider, of Vienna, presided. The following points were discussed:—First, the best means of stopping carious teeth. The majority of speakers declared gold to be the best material for it, and that amalgams or cement were the only substitutes for gold which could be safely employed. Among the former, the so-called "ash-mass," a compound of fine gold, silver, and pure tin, was recommended. The best means of destroying the diseased pulp before stopping the teeth was then taken into consideration; the galvanic cautery and arsenic, cautiously applied, being pronounced the best means for attaining this end.

For the treatment of neuralgia of the substantia eburnea, the use of strong caustics was dissuaded; and tannin, creosote, and nitrate of silver were declared to be preferable. The other points discussed were the best apparatus for giving the teeth a straight position, and the use of caoutchouc in dental surgery.—*Leipzig Correspondent Med. Times and Gazette.*

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TEETH MANUFACTORY AND DENTAL DEPOT,

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SUCCESSOR TO J. M. CROWELL.

Having purchased the entire establishment heretofore known as Crowell's Teeth Manufactory, I have spared no pains or expense in adding new moulds of the most approved styles and shapes for the Vulcanite Continuous Gum, and all kinds of mineral teeth required by the Dental Profession. I am now prepared to furnish, at wholesale or retail, an article equal in strength, shade, and natural appearance, to any in the market, at lower prices than can be had in the United States or Europe. Soliciting your patronage, I hope at least you will call and examine my goods before purchasing elsewhere.

W. B. Roberts.

LIST OF PRICES.

Block or section teeth for vulcanite base or cheoplastic work, with pins, ...	20 cents
do do do with holes	15 "
Single gum teeth for vulcanite or cheoplastic base work with pins	15 "
do . . do do plate work	15 "
Continuous gum teeth, with Roberts' one pin, ...	8 "
do do with two pins, ...	8 "
Plain teeth for vulcanite or cheoplastic base, ...	8 "
do for plate work	8 "

A discount of 20 per cent. will be made on all bills for teeth amounting to $50 and upward, and 25 per cent. on all bills of $100 or more, thus enabling dentists who wish to buy at wholesale, to save, at the above prices, about fifty per cent. upon the prices charged by other establishments. I am induced to offer teeth on such liberal terms to my professional brethren, because I am well aware that all money earned by the dentist is from his own personal labor and a dollar saved by the purchase of teeth, is easier made than to fill teeth for it, and might as well be placed to his credit as to go to enrich the already rich manufacturers. Very few dentists who make mechanical work, use less than from fifty to five hundred dollars' worth of teeth in a year, which, by

judicious purchases, would, in a few years, amass quite a fortune for the hard-working dentist.

Roberts' Material for Continuous Gum Work.

Gum, per ounce, troy weight,	$2 00
Body, do do	1 00
Platina, do do	6 50
Etching, Enamel, per box,	1 00
Pure Gold,	1 10

Carvers or Knives for continuous gum-work, etc.

Metals and Minerals.

Gold plate 18 carats,	$0 90	per dwt.
do for clasps,	90	“
Gold solder, 18 carats,	90	“
do 16 carats,	75	“
Pure Gold,	1 10	“
Pure Silver Plate,	2 00	per oz.
Precipitate of Silver,	2 00	“
Townsend's Cement,	1 50	“
Silver Solder,	9	per dwt.
Bismuth,	1 50	per lb.
Asbestus,	38	“

Tin, lead, zinc, and all other metal at the lowest market prices

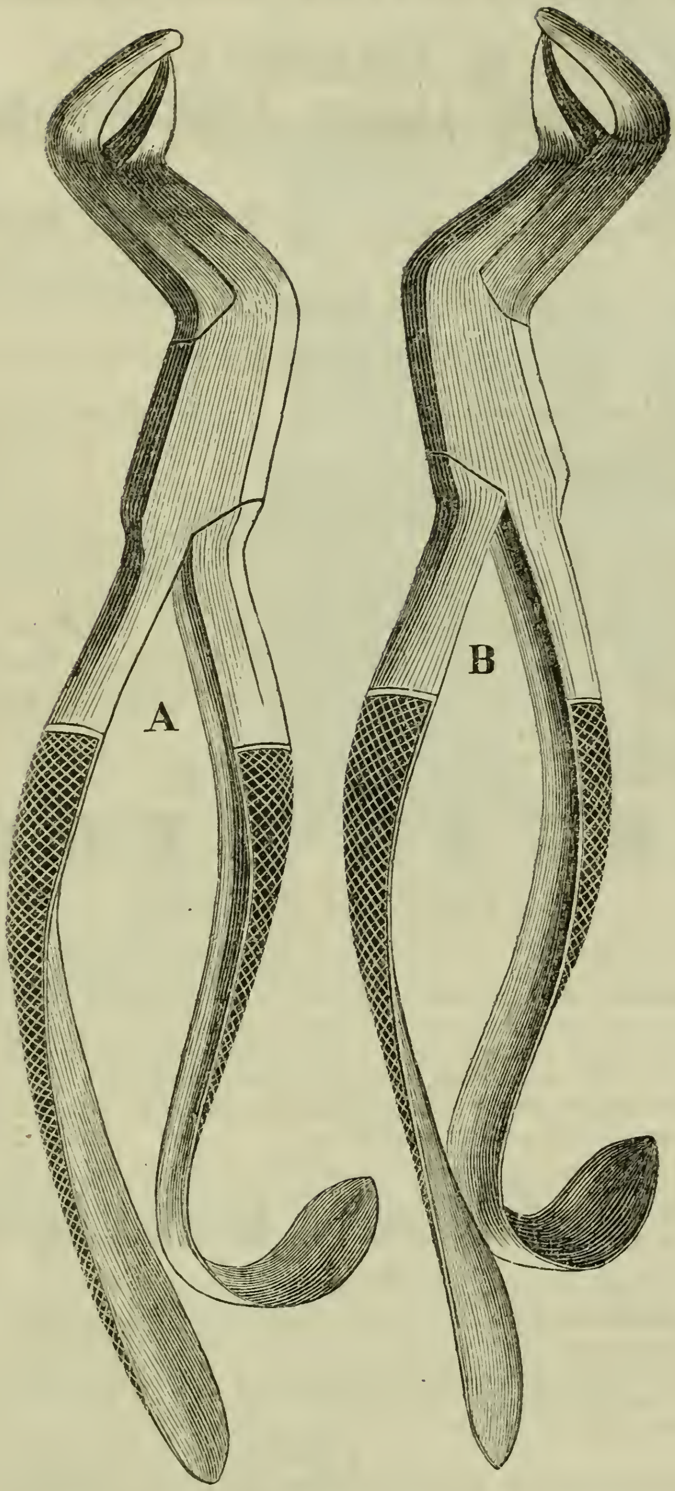
Vulcanizers.

Small size alcohol-burning machine. 2 pieces	$18 00
Large “ “ “ 3 “	20 00
Small size gas-burning machine, 2 “	18 00
Large “ “ “	20 00
Adjustable set screw for Index,	
Small size gas-burning self-regulator, 2 pieces,	23 00
Large do do do do	28 00
Amber Base for Vulcanite,	8 00
Rubber Base do	3 00

Furnaces.

No. 1, Large Furnace, with three muffles, $18 00. Muffles each,	
Boxing and cartage,	1 75
No. 2, Furnace, with three muffles, $16 00. Muffles each,	38
Boxing and cartage,	1 50

Dental Chairs, Rolling Mills, Roberts' Wisdom Teeth Forceps, and all kinds, of the most approved make and style. Excavators, pluggers, plate punchers, etc., etc.



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DR. G. DIEFFENBACH'S
IMPROVED AMBER COMPOSITION,

AND

Gum-Color Pink Vulcanite, and Best India-Rubber Gum.

Any Dentist wishing to give them a trial, by applying to me, either by mail or otherwise, will receive the necessary instructions to manipulate them, and a small piece of either Compound.

In order to induce a larger sale, and to bring them within the reach of all, I have reduced the price as follows :—

Improved Amber Compound, per lb.	$8 00
Pink Vulcanite	5 00
Best Prepared India Rubber Gum	2 50
Gutta Percha for Impressions	2 00
Dentine per oz.	3 00

Also One Dollar Packages.

Allowing 25 per cent. commission to the Trade, and to all orders above 5 pounds.

All letters of inquiry must be prepaid, and a return stamp enclosed.

GEO. DIEFFENBACH & BRO.,
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The firm of Jones & White is dissolved, to take effect May 1st, 1861. All debts due the New York house to that date will be collected by A. Jones, at his office 710 Broadway, where he will keep constantly on hand a well selected stock of Teeth from Oram & Armstrong, (three first-class premiums received.) D. H. Porter, and S. W. Stockton. Also an entire new stock of Dental Instruments of the very best manufacture, together with every article used by the Dental profession.

A discount of ten per cent. will be made on all cash bills for Teeth amounting to $20, and like proportion on larger amounts.

The Watts Crystallized Gold Foil Manufacturing Company,
NEW YORK.

A. J. WATTS begs to inform his friends and the profession that he is permanently engaged with the above Company, and is now preparing Crystal Gold, Crystal Gold Foil, and Soft or Non-Adhesive Foil, superior to any heretofore made by him. He now has every facility necessary for manufacturing, and all orders will meet with prompt attention. Please address

A. J. WATTS, Agent, Box 1296, New York.

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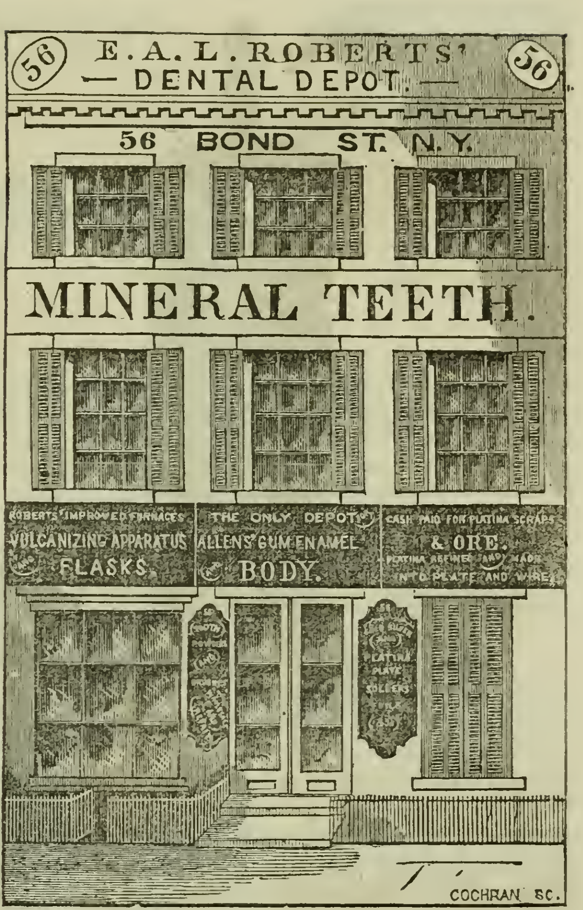

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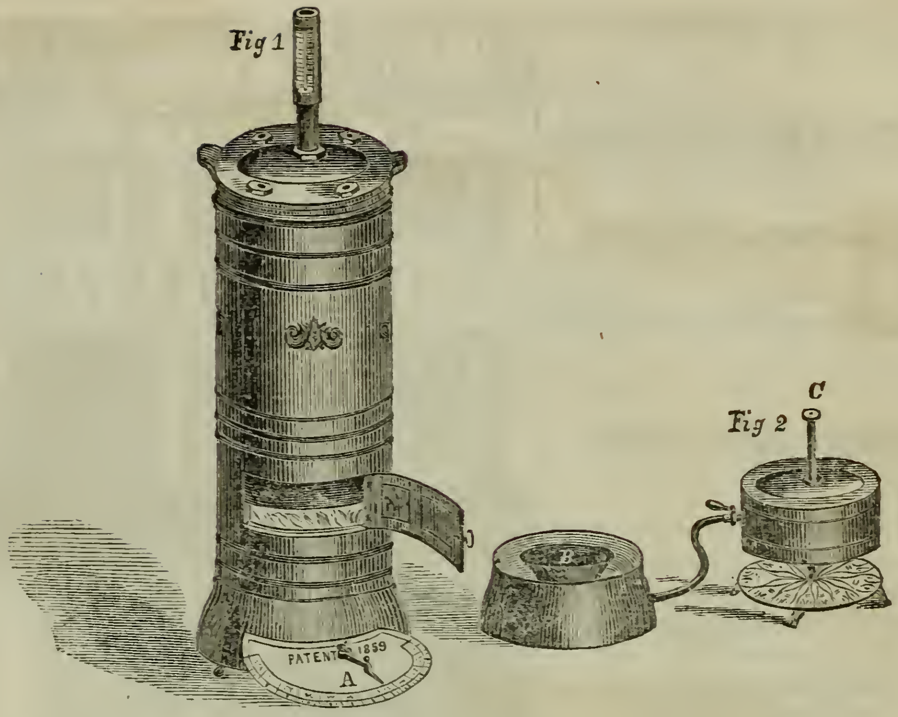
Materials for Continuous Gum Work.

Gum, per ounce, troy weight,	$2 00
Body, " "	1 00
Platina, " "	6 50
Pure gold, " "	1 10

Teeth.

ROBERTS' Gum-teeth for plate-work,	$0 15
" Plain " "	0 8
" Continuous gum, 1 pin,	0 8
" " " 2 pins,	0 8
" Blocks or sections for vulcanite base, or cheoplastic work, with pins,	0 20
" " with holes,	0 15
" Single gum-teeth for vulcanite work, with long pins,	0 15
" do do with holes,	0 16
PORTER'S Gum-teeth for plate-work,	0 15
" Plain " "	0 8
" Continuous gum, 2 pins,	0 8
" Roberts' " 1 pin,	0 8
" Gum for vulcanizing long pins,	0 16
Block " "	0 20



E. A. L. ROBERTS' IRON VULCANIZER.

Figure 1 is the gas-machine, complete, comprising the steam-chamber, with its thermometer and boiler at the top: the stove which confines the heat around the boiler and steam-chamber, in the centre; and the gas-burner, with its regulating index, as at the bottom.

Figure 2 is an alcoholic burner, to be used in place of the gas-burner A, in figure 1, when gas cannot be obtained. Gas, however, is the most desirable of all sources of heat, for this apparatus.

In Figure 2, C is a thumb-screw, by which the lamp can be elevated or depressed, governing the flow of alcohol into the burner B.

Although other vulcanizing machines have been offered to the profession within the last few years, we hazard nothing in claiming a marked pre-eminence for that which is represented in the above engraving. It combines the advantages of economy, compactness and convenience, in an eminent degree. It may stand on the work-bench in the operator's laboratory, without producing uncomfortable heat, at any season of the year.

It can be heated by gas, when that article can be obtained conveniently, or by alcohol when gas is not available; and, in either case, the expense of fuel is quite inconsiderable. It can be so adjusted as to remain at any required degree of heat, for any length of time.

This kind of vulcanizer is constructed of two sizes. The largest machine is nineteen inches in height, including the base; its diameter is seven and a half inches; its weight is thirty-one pounds; and it vulcanizes four pieces at a time.

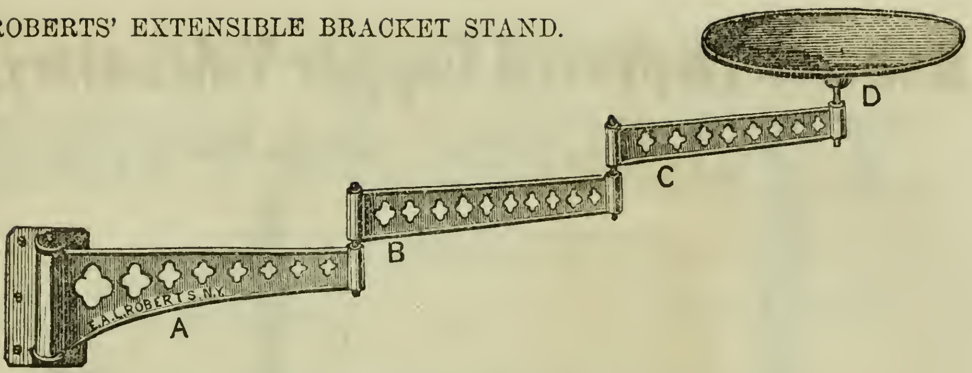
The smaller size is fifteen inches in height, seven and a half in diameter, weighs twenty-seven pounds, and vulcanizes three pieces at a time.

An itinerant dentist can carry with him this smaller machine with less inconvenience than the various apparatus for swaging metallic plates.

The above cut represents the first gas and alcohol machines offered to the profession that can be used with either chloride of calcium, beeswax, or any material that does not evaporate or decompose when heated to a temperature of 310 degrees.

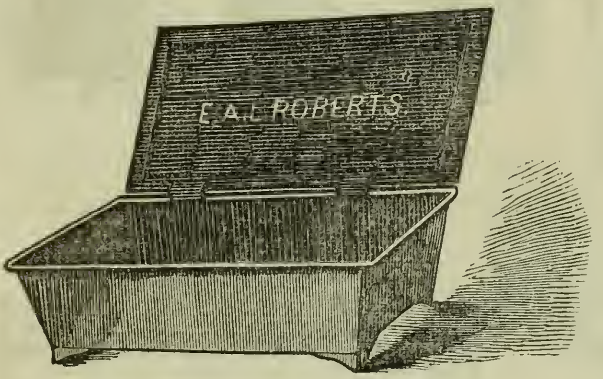
The profession will take notice that all gas and alcohol vulcanizers now in the market are direct infringements on each of my *patents* dated 1859.

ROBERTS' EXTENSIBLE BRACKET STAND.

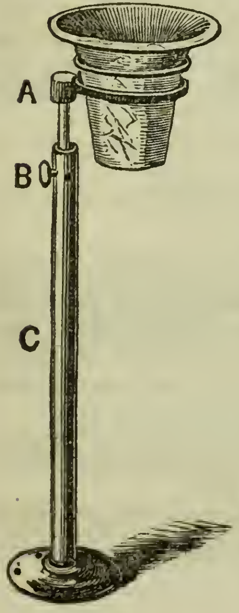

D
C
B
A
E. A. L. ROBERTS, N.Y.

This very convenient stand is made of three segments of ornamented iron, A, B, C, (see engraving). These may be instantly separated from each other, and when connected, by being slipped into their respective sockets, may be folded edge-wise upon each other, and laid closely to the wall or partition to which the bracketed end may be fastened. The desk or top D, is equally and firmly adjustable to the end of either of the segments. It will be seen from the engraving that when affixed by means of the bracket to any wall or upright, the bracket stand may be turned at pleasure, and accommodated to any height, or position, or posture the dentist may assume during his operations. This is regarded as an especially happy contrivance as a tabular support for all the dentist may need during his operations. Price $5.

IMPROVED MOULDING AND SAND BOX.


E. A. L. ROBERTS.

The accompanying engraving is a figure of a casting-box recently designed by us. It is superior in being of solid metal (painted and bronzed), and so provided with a flanged cover that it obviates all the difficulty, much experienced, of the drying of the moulding sand. It can neither be warped, bent, nor charred—qualities especially desirable in this article. Weight about 53 pounds. Length 30 inches. Width 16½ inches. Depth 8½ inches. Price $5.



ROBERTS' ADJUSTABLE SPITTOON.

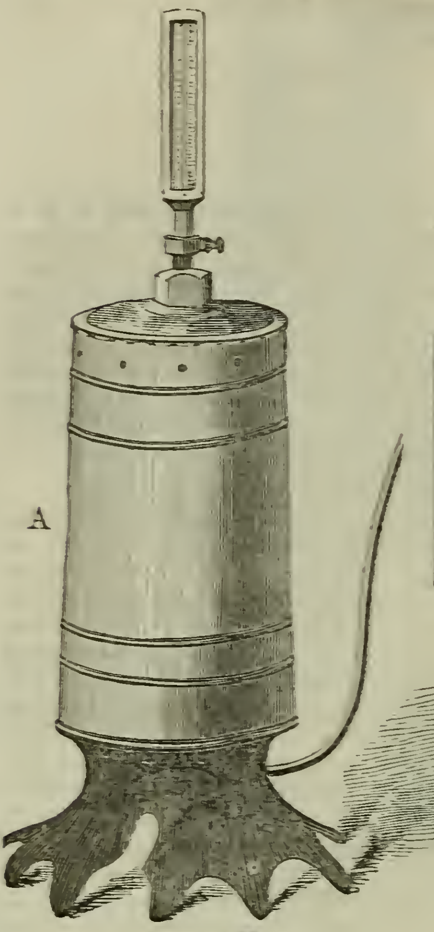
A glance at the engraving will suffice to exhibit the advantages of this article. C is the rod pedestal, which may be temporarily or permanently affixed to any level desired, by its disked extremity. By means of B, it may be lowered or raised at pleasure. The top and body of the spittoon are separate, and may be lifted away from the ring represented by A.

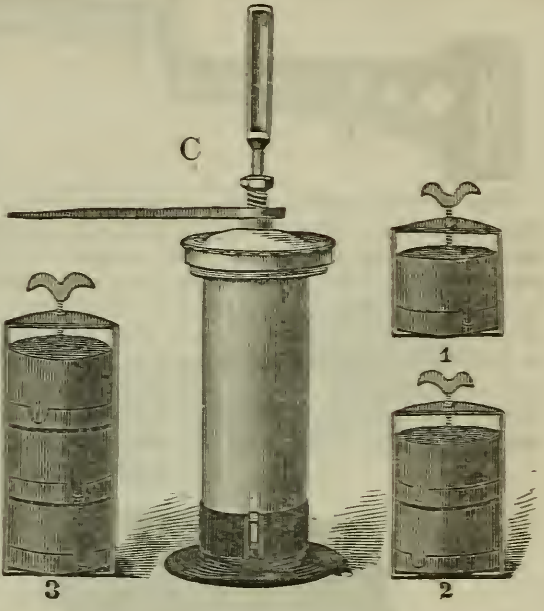
IMPROVED FLASKS, &c.

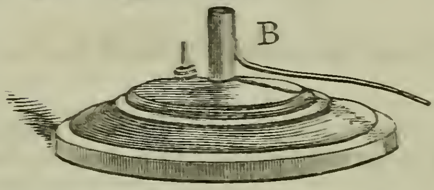
We now offer an assortment of Flasks, viz.: Hawes', Sectional, and others, moulding rings of all sizes and styles, melting ladles with adjustable handles—an improvement of our own—with a full assortment of furnace and melting tongs.

Roberts' Improved Copper Vulcanizer,

Fully represented in Figure A with gas burner.







PRICES.

No. 3. large size	$12.00
" 2. second "	10.00
" 1. small "	8.00
Flask, each	.50
Alcohol burner, extra	1.00
Thermometer, with safety valve, extra	1.54
Brass cylinders instead of sheet iron, extra	1.25

These machines are the most compact, light, and the strongest of any now in market. They are made entirely of copper and brass. The copper chamber is spun from one solid piece of metal, dispensing with brazing, making it smooth and of equal thickness. They are constructed of three sizes. No. 3, the largest size, is seven and a half inches high, four inches in diameter, weighs three pounds, and vulcanizes three pieces at a time. No. 2 second size, is six inches high, four inches in diameter, weighs two and a half pounds, and vulcanizes two pieces at a time. No. 1, small size, is four and a half inches high, four inches in diameter, weighs two pounds, and vulcanizes one piece at a time.

Figure B represents the alcohol burner with its regulator.

Figure C represents the machine placed in ring, the ring being screwed fast to the bench which holds the chamber, while the wrench at the top is used to screw on and off the cover.

The three clamps with flasks (1, 2 and 3) represent one for each size machine.

The cover of each machine has a plug of fusible metal screwed into it, which fuses and allows the steam to escape before the pressure reaches one hundred and twenty pounds. This machine, for simplicity, safety and economy, is superior to all others, requiring less than half a pint of alcohol, or if gas is used, one fourth of a burner of ordinary size, to vulcanize.

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For an OFFICE-RIGHT, *without tariff*,	$100 00
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Other TOOLS and MATERIALS at reasonable prices.

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We have every facility for doing the

WORK IN THE BEST MANNER.

The character of our work is acknowledged to be Superior, and the results

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Those wishing to test the work can set up their

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On a thin

PLASTER MODEL OF THE MOUTH,

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DISSOLUTION OF COPARTNERSHIP.

The copartnership heretofore existing, and carried on in Philadelphia, New York, Boston, and Chicago, under the name and firm of JONES & WHITE, is dissolved by mutual consent, as of the *first of May* last. *The entire Business has devolved upon and will be continued by*

SAMUEL S. WHITE,

one of the firm, at all their former establishments. The debts due to the firm, at Philadelphia, Boston, and Chicago, belong to and will be settled with the subscriber. Those contracted at 658 Broadway, New York, since May 1st, (excepting only amounts due for Gold and Silver Plate, and Foil, purchased previous to July 12th), will also be settled with him.

SAMUEL S. WHITE,

Dated New York, June 26th, 1861.

AT A SPECIAL TERM OF THE NEW YORK SUPERIOR COURT, held at the City Hall, in the City of New York, the 13th day of January, 1862.

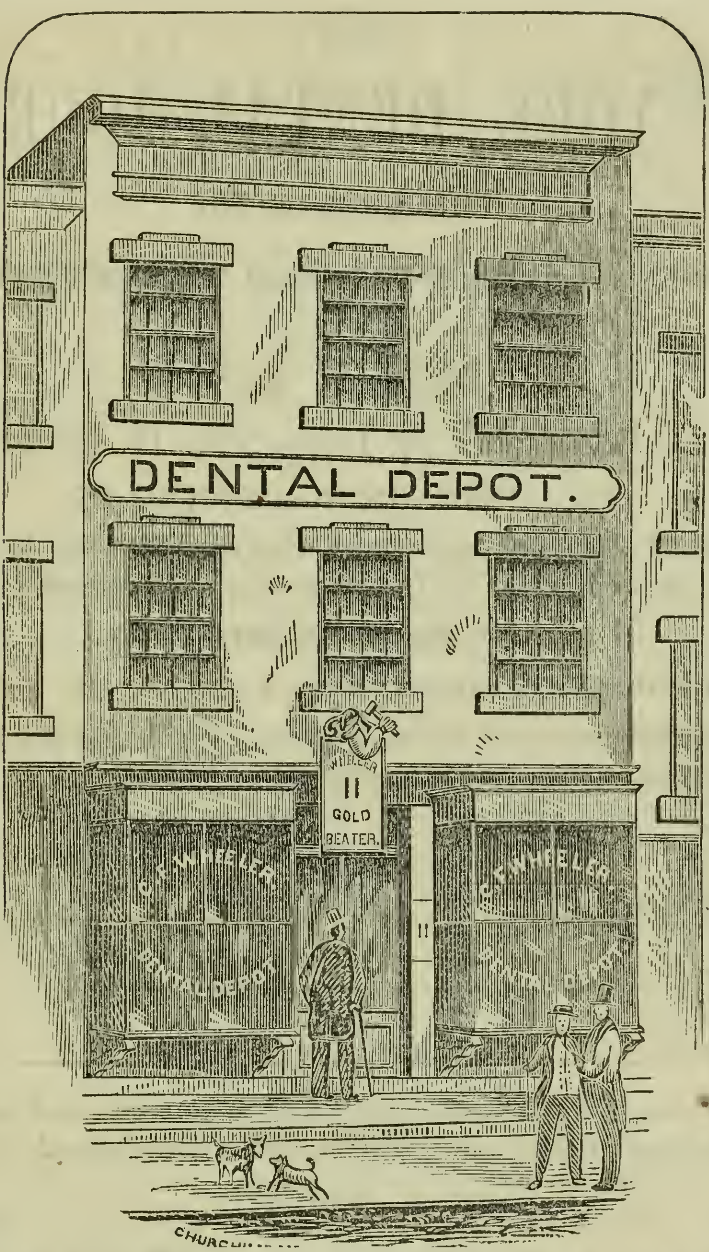
Present, Hon. CLAUDIUS L. MONELL, Justice.

SAMUEL S. WHITE,
against
ASAHEL JONES and
GILBERT C. PLATT.

On reading and filing the summons and complaint in the above entitled action together with the affidavits of James Holbrook, James Gayler and Samuel S. White, all severally sworn to on the 4th day of January, instant, and on motion of Noyes and Tracy, Attorneys for the plaintiffs herein.

Ordered: That the above defendants, Asahel Jones, and Gilbert C. Platt, and each of them, be, and they are hereby enjoined, restrained and commanded to refrain from receiving or opening any and all letters or orders, or either, directed or addressed to Jones and White, or to Jones, White & Co.; or to Jones, White & McCurdy, or to any or either of said firms, or names, and from filling the same or the orders or request contained therein, and from in any way interfering with the business of the said firm, or the good will thereof, or of the plaintiff, or of his interest therein until the other or further order of this court to that effect.

R. D. LIVINGSTON, Clerk.



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PUBLISHED ON THE

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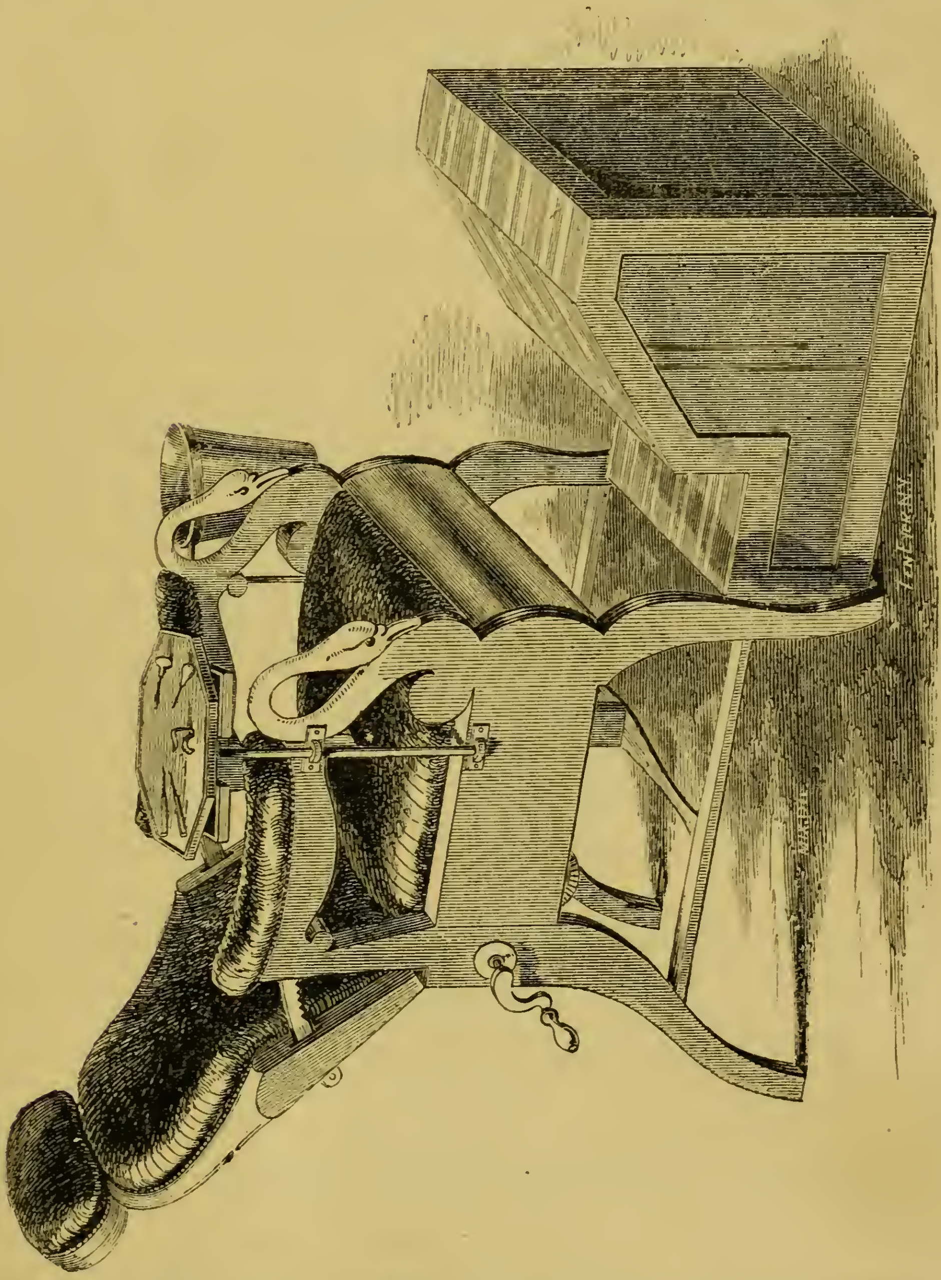

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Vol. 5. No. 2.

THE
NEW YORK
DENTAL JOURNAL.

EDITED BY

W. B. ROBERTS AND FRANK H. NORTON.

SEPTEMBER, 1862.

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NEW YORK:
W. B. ROBERTS, PUBLISHER AND PROPRIETOR,
OFFICE, 691 BROADWAY.

LONDON: TRÜBNER & CO.
1862.

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THE

NEW YORK DENTAL JOURNAL.

SEPTEMBER, 1862.

ORGANIZATION AND MINUTES OF THE "NEW YORK DENTAL PROTECTIVE UNION."

It having been for a long time tacitly conceded by the better class of the dental profession in this country that there was great need of some adequate protection for their body against the impositions of corporations and individuals, who without the shadow of right or justice had preyed upon their means and enriched themselves at the expense of those who in return received nothing which should justify such imposition; and it being evident that from New York should naturally go forth the impetus necessary to the forwarding of such a cause, New York being the metropolis of the profession as it is of the whole country, it was decided by prominent dentists in this city to undertake the forming of an organization which should the most readily and the most naturally effect those objects which the profession had at heart; and having its centre here, should ramify through all the country, and protect the interests of every dentist within its sphere of labor. From this decision on the part of these gentlemen, sprang the New York Dental Protective Union, and in the chronicle of its labors and successes thus far, will be seen the importance which must necessarily attach itself to such an organization for such a purpose.

tion of patents, all uniting in the judgment that strong action should be taken by the profession in the premises. Adjourned, to meet at the same time and place on the 28th inst.

April 28th, 1862.

The Association met at 8 o'clock, the President in the chair. The committee on permanent organization reported a Preamble and Resolutions, which were received and adopted. On motion, the Association proceeded to ballot for permanent officers, when the following gentlemen were elected:

President.—Wm. H. Dwinelle,
1*st Vice-President.*—Walter B. Roberts,
2*d* " " —S. A. Main,
Secretary.—Frank H. Norton,
Treasurer.—A. McIlroy,

Which together compose the Council of Management. On motion, adjourned to May 6th.

May 6th, 1862.

The meeting was called to order at the appointed hour by the chair. Some discussion was then carried on by Drs. Clark, White, Miles, Roberts, and others, in reference to the validity of various patents. The meeting then adjourned to May 13th, 1862.

May 13th, 1862.

The meeting was called to order at 8 o'clock by Dr. Roberts, in the temporary absence of the chair. The Secretary read the minutes of the last meeting, which were approved and adopted. The Committee on Permanent Organization reported a Constitution consisting of XVIII articles, with a Preamble and Resolutions setting forth the objects of the Society.

The President now entering, took the chair, when it was resolved that the Constitution should be read by the Secretary, and passed upon, article by article. This course was therefore pursued, and all the articles adopted as written, except article XV, which was altered, and adopted as amended.

On motion the final adoption of the Constitution as a whole was laid over to the next meeting. On motion, a Committee was appointed by the chair, to draft and distribute a circular to the Profession, setting forth the objects of this Association, said Committee to report at the next meeting. Messrs. Lovejoy, Miles, and Norton, were appointed as the Committee. On motion adjourned to meet May 20th, at the same time and place.

May 20*th*, 1862.

The Society was called to order by the chair at half-past 8 o'clock. The minutes of the last meeting were read and adopted. The committee appointed at the last meeting to draft a circular to the Profession, reported a circular, which was adopted. On motion, the Preamble, Resolutions, and Constitution reported at the last meeting, were read and adopted as a whole. On motion, it was resolved to print 3,000 copies of the Preamble, Resolutions, Constitution, and Circular, as adopted, and distribute them among the Profession. Messrs. Miles and Norton were appointed a Committee on Printing. Adjourned, to meet May 29th.

The following are the Preamble and Constitution adopted :

PREAMBLE.

Whereas, the art of Dentistry, by virtue of its acknowledged worth and by the consent of the world, has taken its place among the liberal professions of the day, and that whereas to sustain itself with becoming dignity, it should discountenance all quackery and pretension in all their forms—all dishonorable and disreputable acts of whatsoever kind—all attempts at bribery and extortion, and whereas we perceive in the growing progress of our profession, an ever increasing effort on the part of those who would profit by ill-gotten gain to invade our laboratories, possess themselves of our familiar processes, patent the same, and then levy black mail upon us for using our own inventions and system of manipulation under peril of the law ; and whereas, this system of swindling has been so insidiously and successfully carried on of late, that we are mortified to record the fact, that our own profession has already furnished to one monopoly, over $40,000 to uphold and sustain the outrageous system we deprecate ; and whereas, the success of parties of the character indicated, has so far given encouragement to others, that we are almost daily invaded at our doors and insolently importuned by a horde of swindlers upon our profession; and whereas, duty to ourselves, to the *right* and to the world at large, requires that we should protect ourselves against such unrighteous innovations, therefore—

Resolved, That in view of the fact that the city of New York is one of the great centres of the profession from which authoritative information is expected to emanate, we do hereby form ourselves into a protective association, having for its name and title, the "New York Dental Protective Union." Officers of said Association to consist of a President, two Vice-Presidents, Secretary, and Treasurer; the object of said Protective Union being to defend suits at law whenever in their opinion the invaded rights of the profession shall demand it, to furnish information to all correspondents who may desire it, and to be the recipient of all information from the profession at large, whose duty it will be to reciprocate by furnishing the same.

CONSTITUTION.

Article 1.—This Association shall be known by the name of the "New York Dental Protective Union."

Art. II.—This Association shall be composed of members of the Profession of Dentistry, and of other parties therein interested; and of such persons as shall be elected Honorary Members by the Council of Management.

Art. III.—Any person who having been duly elected, shall subscribe to this Constitution, paying the adjudged fees of initiation and annual subscription, may become a member of this Association.

Art. IV.—The initiation fee of this Association shall be one dollar, and the annual dues of this Association shall be one dollar, to be paid annually in advance.

Art. V.—Persons elected Honorary Members by the Council of Management, shall be entitled to all the privileges of the Association, except the right to vote and to hold office, and shall be exempt from all dues.

Art. VI.—If the dues of any member remain unpaid during twelve months, his privileges and rights of membership shall be forfeited, unless his delinquency be excused by the Council of Management,

Art. VII.—There shall be an annual meeting of the members of the Association on the first Tuesday in May, for the election of officers; there shall also be a quarterly meeting held on the first Tuesdays of May, August, November, and February, respectively, for the purpose of receiving reports from the Council of Management, Secretary, and Treasurer, and the transaction of such other business as may be necessary. And there shall be monthly meetings on the second Thursday of each month, for the discussion of matters appertaining to the objects of this Association. And at the monthly meetings there shall not be transacted any of the actual business of the Association, excepting election to membership. All other meetings of the Association shall be subject to the call of the Council of Management.

Art. VIII.—In this Association five members shall constitute a quorum.

Art. IX.—The officers of this Association shall be a President, two Vice-Presidents, Secretary and Treasurer, forming together the Council of Management, to be elected annually, by ballot, at the time herein before appointed.

Art. X.—It shall be the duty of the President to preside at the meetings of the Association; to preserve order therein; and in case of an equal division of the members on any question, to give the casting vote. He shall also appoint all Standing Committees.

Art. XI.—The President of the Association shall be *ex officio* President of the Council of Management, in which he shall be entitled to the casting vote.

Art. XII.—The Vice-President shall, in the absence of the President, perform all the duties of that officer.

Art. XIII.—The Secretary shall conduct the correspondence of the Association, and shall keep an accurate record of its business and transactions, and of the Council of Management.

Art. XIV.—The Treasurer shall receive all initiation fees and dues from the members, and all sums collected by the Committee on Finance;

he shall pay all drafts upon him when signed by the Secretary and countersigned by the President; and he shall keep a regular account of the financial concerns of the Association, a report of which, accompanied by satisfactory vouchers, he shall exhibit at each quarterly meeting, as herein before provided.

Art. XV.—The officers of the Association shall together constitute a Council of Management to conduct the affairs of the Association. The Council of Management shall meet at least one evening in each month for the transaction of business, and shall report at each quarterly meeting to the Association, but the Council of Management shall only appropriate the funds of the Association by and with the consent of its members, expressed at some special meeting, one week's notice thereof being given.

Art. XVI.—Members shall be elected to this Association by a majority of votes, being proposed at one monthly meeting previous to election, unless unanimously elected on proposition. Every aspirant to membership shall be proposed by two members of the Association in good standing.

Art. XVII.—There shall be in this Association the following Standing Committees:

1st. A Committee of three on Membership, to whom shall be referred the eligibility for membership of all such persons as shall not be unanimously elected on proposition; said committee to report at every monthly meeting.

2d. A Committee of eleven on Patent Rights, of which the Council of Management shall be *ex officio* members, whose duty shall be to investigate the nature and validity of all patents issued, wherein the dental profession shall be directly or indirectly interested; said committee to report from time to time, as the interests of the Association may in their opinion demand.

3d. A Committee of five on Finances, to whom shall be referred all extraordinary expenses, including the collecting from the profession of such moneys as shall be needed for the proper carrying out of the intention of this Association, in the protection of the interests of its members, whether in the conducting of suits at law or otherwise.

Art. XVIII.—No article of this Constitution shall be altered or amended, except by a two-thirds vote of all the members present, at a regular meeting, notice of the proposed alteration or amendment to have been given at a previous meeting.

TO DENTISTS.

The members of the Dental Profession in the city of New York and its vicinity, having formed themselves into an Association for the protection of the interests of the profession throughout the country, take this method of circulating the objects of the Association, with a desire to induce universal co-operation with them on the part of the profession.

In view of the fact that parties pretending to hold legal patent rights over the manufacture and sale of certain articles necessary to our profession; and that these patents are with good evidence and good reason presumed to be invalid; and that the parties holding them have used and are using underhand and improper means to promote their interests in the premises, to the sacrifice of those of the profession as a body; it becomes us to take such steps as shall put an end to all such conduct, and shall conduce toward the protection of the right at all hazards and at all expense.

By means of this Association we propose to arrive at the end desired; we propose to have every patent which shall be of interest to the Dental Profession carefully examined by competent judges, and if necessary, the question of its validity decided by test suits, to be conducted by this Association, and by means of funds obtained from the profession throughout the country, all of whom are certain to be deeply interested in such issues.

We propose through our Secretary to answer all questions appertaining to the objects of this Association, and to make the profession acquainted with every thing valuable or useful to them, which may from time to time come to our knowledge.

In view of these facts we suggest the propriety of your forwarding your name to the Secretary of this Association, to be attached to our Constitution, when you will at once, upon election, become entitled to all the privileges of membership, including the right to protection when your interests shall be illegally attacked.

By order,

Wm. H. Dwinelle, *President.*

Frank H. Norton, *Secretary.*

Astor Library, New York.

May 29th, 1862.

The Association met, pursuant to adjournment, at half-past eight o'clock, the President in the chair. The minutes of the last meeting were read and adopted. The members present then signed the Constitution, when the meeting adjourned to June 5th.

June 5th, 1862.

The Association met, pursuant to adjournment, and was called to order by the President. The Printing Committee reported progress, and asked for time; report accepted, and time granted. On motion, the President proceeded to make some remarks in reference to the intentions and objects of the Association; the causes which have united to render it necessary; the success which it has thus far attained, and its intentions in the future. On motion, the President appointed Messrs. Kingsley, Clark, and Lovejoy, as a Committee on Patents; the balance to be added at a future meeting. On motion, adjourned to the next regular meeting, June 12th.

June 12th, 1862.

The Association met pursuant to adjournment, the President in the chair. The President added to the Committee on Patents the name of Dr. Geo. H. White. Adjourned to June 19th.

June 19th, 1862.

The Association met pursuant to adjournment. The President completed the Committee on Patents, by adding to it Drs. Bronson and Smillie. Adjourned to the next regular meeting, July 10th.

July 10th, 1862.

The Association was called to order by the chair. The Secretary being absent, reading of the minutes of the last meeting was dispensed with, and Dr. Kingsley was elected Secretary, *pro tem.* The Committee on Patents reported progress, and asked for time, which was granted. Adjourned.

July 25th, 1862.

At a special meeting of the Association, called by the President, the Committee on Patents reported the minutes of the last meeting as a report. On motion the Association agreed to print and distribute a circular, which was read to the Association and adopted.

On motion the Treasurer was ordered to pay the printing-bill, and money was subscribed by the members present.

MINUTES OF THE COMMITTEE ON PATENTS.

This Committee, consisting of Dr. Kingsley (chairman), and Drs. Lovejoy, Clark, White, Bronson, and Smillie, with the Council of Management of the Association (*ex officio* members), held a meeting at 781 Broadway, June 19th, 1862. The Chairman, Dr. Kingsley, took the chair, and announced that a quorum was present, and the Committee ready to proceed to business. Some remarks were made by the chair in reference to the importance of this Committee and its duties, followed by Dr. Dwinelle. On motion, the Committee decided by a unanimous vote, to proceed to the investigation of the validity of the patent of the American Hard-Rubber Co. On motion, it was decided to request the presence of Messrs. W. J. A. Fuller, and Emory Ryder before this Committee at a future meeting, for the purpose of obtaining testimony from them in reference to this subject. Adjourned to meet subject to the call of the chair.

A meeting of the Committee pursuant to call, took place at the residence of Dr. Wm. H. Dwinelle, No. 119 Tenth St., on Wednesday evening, July 16th, 1862. There were present Dr. Kingsley (chairman), and Messrs. Dwinelle, White, Roberts, Miles, and Norton; also by invitation, and in accordance with the action taken at the last meeting, Messrs. W. J. A. Fuller and Emory Ryder.

The meeting came to order, and by request, Messrs. Fuller and Ryder gave the gentlemen present such information as they possessed which would enlighten them in their investigations into the validity of the patent of the American Hard-Rubber Co., and the proper method to pursue in order to settle conclusively all doubts in the minds of the profession of the right of the rubber monopoly to exact tribute from them.

The Committee were informed by Mr. Fuller, that in the ensuing week there would be tried in the town of Windsor, Vt., no less than thirteen suits for infringement of the Rubber Patents; and that the decision rendered in those suits would settle the question of the validity of the patent now held by the American Hard-Rubber Co.

Furthermore, the Committee were assured that the counsel for the defence in these cases were possessed of evidence proving beyond cavil, that the article known as "Hard-Rubber," had been compounded of the same materials, used in the same quantities, and vulcanized by the same process, years before the Nelson Goodyear Patent, under which the American Hard-Rubber Co. manufactures, had ever come into existence.

And again, the said counsel had in their possession, and would produce in evidence at the proper time, a piece of hard-rubber manufactured by one Hancock in England, at the time above-mentioned, and whose history from that time to the present could be accurately traced.

Not only had this patent been granted and published, but articles manufactured in accordance with it were then in use.

It was stated by Mr. Fuller that no chemist had ever yet been able, after the most careful analysis, to detect the ingredients, much less the proportions or process used in the manufacture of hard-rubber. And until that could be done, no man could be defeated in a suit for infringement, by the production of a piece of his manufacture in evidence; unless he had been followed throughout the entire operation by an eye-witness, he could not be molested. It was also in evidence before the Committee that the American Hard-Rubber Co. are not in equity the owners of the patent, they holding possession of it only by sufferance of the real owner, measures being now in progress to take it from them.

The Committee were advised that the best course to be pursued by them in the premises, would be to draft a circular informing the profession of the fact that the American Hard-Rubber Co.'s Patent was undoubtedly invalid, or that, if valid, it does not in equity belong to them, nor could any one be successfully prosecuted for infringement upon it, since it was impossible to identify the article manufactured. By these means the profession might be saved much expense, even previous to the expected decisions in the cases already alluded to. The meeting then adjourned.

CIRCULAR TO THE DENTAL PROFESSION.

The New York Dental Protective Union announces as the first reresult of its efforts to protect the interests of dentists throughout the country, the following conclusions based on the investigations of their "Committee on the Examination of Patents."

The patent under which the American Hard-Rubber Co. are now manufacturing, and through which they have obtained from our profession some $50,000, has received their special attention. Eminent patent lawyers and experts have given before the Committee the results of their examinations into the validity of the patent, and the claim of the American Hard-Rubber Co. to its ownership, and the testimony is conclusive: 1st. That the patent, in equity, does not belong to the Hard Rubber Co. and measures are now in progress to take it from them, and 2d. That the patent itself is invalid. The validity of the patent has never in a single instance been passed upon by the courts, but there are thirteen cases to be tried at Windsor, Vt., the coming week, and a decision may be expected in early autumn. The evidence above referred to is so conclusive that, pending the decision of the courts, we cannot but advise the profession, in protection of their own interests, to refrain from any further purchase of licenses of, or payment of tribute to the American Hard-Rubber Co.

BI-SECTED BLOCKS,

FOR FULL OR PARTIAL SETS.

We copy below an article on this subject from the March number of the New York Dental Journal, and also a reply to it, published in the *Vulcanite* for May. We would also bespeak the attention of the profession for the accompanying letter from J. Brockway, and our editorial comments appended.

"TO THE PROFESSION.

"Since the introduction of Hard Rubber as a base for artificial teeth, Dentists have been trying with all the means in their power, to procure teeth that can be mounted upon this base, that will approach as near as possible to continuous gum teeth; even continuous gum sets have been made, and rubber base attached, which makes a beautiful looking set, but the expense is an objection, and in case a piece breaks, it requires as much work to repair as to construct the whole piece at first. Since we have been manufacturing teeth, we have given our time to many experiments in trying to perfect something that would give satisfaction to ourselves and the profession. We have tried blocks with the four incisors, also blocks with the six front teeth; but without success. As a piece, when used, receives the greatest strain between the central incisors, checking most any block at that point, especially those mounted upon rubber base, we feel as though we could say to the profession that we have something that will please them very much; they will be as cheap as the common sets of sections, and will be applicable to most every case where whole sets are required. And for this improvement the profession are indebted to Dr. J. Brockway, well known to the profession as one of the best block workers, who has constructed moulds for us by which we are able to give a whole upper or under set in two pieces, the joint being between the central incisors. They can be mounted upon any kind of plates, but are better adapted to the vulcanite base. Time would not allow us to give a full description in this number of our Journal, but in our next we will give a full description, with cuts of the same. In order that we shall have them fully tested, we propose to send to every dentist who may wish, a set for a sample; or otherwise an entire upper or under set, for two dollars per set, or an upper and under to match for three dollars, by enclosing the amount to our address, 691 Broadway, New York. The price of the teeth will be the same as sections, twenty cents per tooth. But in order to have them seen and tested by the profession, we propose to put them at this low price, and if they prove to be what they seem to us now, we shall be fully repaid by having them known to the profession; and if they should prove to be less valuable than they appear to us, we shall feel that we have not asked of our brethren any more than a fair compensation for the cost of making them. As an experiment of this kind requires new moulds, and of necessity must be expensive, we would gladly send one set gratis to every dentist whose address we could obtain, if we could afford to do so, for we feel as though they will be something the tasteful dentist will appreciate."

"Since the above appeared in the *N. Y. Dental Journal* for March, 1862, we have been applied to frequently, by letter and otherwise, for our opinion of the utility of the improvement as set forth in the *Journal.* Our practice has always been to speak of all improvements as we think they deserve, without regard to our own interest or that of inventors. The profession desire the truth, and it is the duty of journalists to reflect their own convictions (if they have any) of the utility of all new modes or things. The profession at large have little means of knowing the merits of any new thing by reading a circular from the pen of interested inventors or vendors, who almost always see advantages that only exist in their own brains. Examples, 'Cheoplastey,' 'Amber Base,' 'Slayton's Gutta Percha,' and we could extend the catalogue to almost any length.

"But to return. The foregoing 'Circular' refers to a style of blocks in two sections *of seven teeth each*, invented or gotten up by Dr. J. Brockway. The doctor applied to us some time since, with a view of inducing us to engage with him in the manufacture of these teeth.

There were several objections in our mind that prevented us from investing in their manufacture, viz., the blocks being in two sections with the only joint between the central incisors, necessarily made that the *weak point* in the denture.

"The teeth articulating upon the bicuspids and molars, the strain in many cases is very great, so much so that gold plates, continuous gum plates, and even the vulcanite, sometimes give way at that point. The force in mastication is exerted on the plate in an outward spiral direction, and a joint between the cuspidatus and bicuspids is indispensable to the durability of all dentures.

"In mounting a full set of teeth in two sections, all the strain exerted in mastication is centred between the front teeth, and must either break the plate at that point, or spring the joints apart at the approximal surfaces of the central incisors.

"Another objection presented itself. In case a single tooth becomes broken by dropping or other accidents, seven teeth would have to be substituted. The trouble and expense of repairing would be too great to justify an attempt at their introduction to the profession.

"The other objection in mounting a full set in two sections would be, the dentist would be compelled to retain whatever of expression the manufacturer of the blocks imparted to his productions. Ordinary sections are bad enough, in all reason; but when a dentist of any *taste* attempts to change the expression of a set of teeth in two sections, he will require to be a descendant, in a regular line, from *old Job*. The best results are obtained from single teeth. This constitutes the chief excellency of *Allen's continuous gum.*

"The introduction of single-gum teeth was (so far as regards a proper expression, which is of the utmost importance) a retrograde move. Blocks in sections of three or five teeth were still worse, but in sections of seven the only change that could be made would be to swing the molar extremity of the blocks outward, which would *flatten* the denture at the central junction, or by swinging the posterior portion inward would *sharpen* the fronts; and thus we have, in musical parlance, the *flats* and *sharps* of expression, but no intermediate tones.

"We should be glad to have Dr. Brockway and Dr. Roberts do well, but not at the expense and reputation of the dental profession. We happen to be among those individuals who are seeking to elevate mechanical dentistry to 'professional importance,' and would recommend this *article* to the careful consideration of all."—*Vulcanite*, *May.*

"BROOKLYN, *July* 30*th*, 1862.

"Dr. W. B. ROBERTS,

"DEAR SIR :—The currency you are giving to my improved teeth in bi-sections, entitles you to a knowledge of their inception and brief history. Twenty-eight years measure my experience in the manufacture and adaptation of mineral teeth in blocks and sections. I have been in the habit of fitting the dental arch with three, four, and seven sections or pieces. An unbroken or continuous gum has long been a desideratum both with dentists and their patients, but dividing the arch into more than three sections is but a small gain upon separate teeth; hence I have generally used but three, six teeth in the centre piece, and four upon the sides. Those who have used these tri-section blocks need not be told of their great liability to break in the centre; a desire to minister to good taste by the nearest approach to continuous gum led me to devise and construct moulds for the fabrication of bi-sected blocks. The object sought was first attained in the fall of 1861. I then constructed moulds for several sets of teeth of sufficient curve and size, in Montpelier, Vt.; and in the month of December brought them to New York. The objects sought, and I believe attained, are cleanliness, beauty, and strength, with diminished labor in setting and repairing. The bi-sected blocks acquire increased strength, as usually they are heaviest in their centre; besides having a hole passing through them laterally, through which passes a wire or rubber, rendering fracture harmless if possible, and being so made as to admit greater strength of base at the centre, where alone is its liability to break or bend.

"It is apparent to all who see them that they are admirably adapted to universal application to the inferior arch, and in all cases where bulk is desirable, to the superior jaw. With increased beauty and durability, they diminish the labor of setting and the occurrence of repairs, while they facilitate readaptation to an altered condition of the jaw.

"They are equally adapted to metallic or rubber base, or plates, although originally designed for metallic plates only.

"A large experience of nearly thirty years, sustains the belief that these bi-sected blocks will gratify the Profession and their patients. As above stated, I came to New York with my moulds; put up a furnace, and produced samples demonstrative of their practicability, which were shown, and met the approval of dentists.

"I had called on but one manufacturer before yourself, but soon after called on B. W. Franklin, agent of the American Hard-Rubber Co., who is not a manufacturer. He regarded them with favor, and thought them particularly adapted to the Vulcanite Base. He showed much anxiety to become the agent and instrument of their introduction. I stated to him that I had partially arranged with Dr. W. B. Roberts. Owing to his good opinion of the teeth, and his bad opinion of Dr. Roberts, he discouraged this Association with the name of Roberts. He earnestly commended the teeth to a better patronage, and to further his apparently kind intentions, took occasion to introduce me to others who sustained his cherished views. He said his present engagements would not allow him to engage in their manufacture, but he knew of one well qualified, who would like the opportunity. He did refer me to Dr. Larcher, a man said to have some reputation and skill, who heartily enlisted; but his means and his skill failed to meet the case. Much to the mortification of both these gentlemen, I returned to you. Their subsequent conduct, as displayed in the pages of the '*Vulcanite*,' bears at least some analogy to that of the fox, whose mouth watered as he looked and leaped at the purple cluster, but who finding it beyond his reach, turned away, saying, '*They are sour things any way.*'

"Yours, &c.,

"J. BROCKWAY."

The most casual observer in the profession will, by reading Dr. Brockway's interesting letter, at once perceive the *animus* of B. W. Franklin's article in the *Vulcanite*, which is simply personal enmity to Dr. Walter B. Roberts, and a desire to frustrate any interest in which he may be concerned. The statement of Dr. Brockway, which we heartily endorse, is sufficiently clear and comprehensive as to the real merits of these bi-sected blocks, not to need any further remarks from us; we will, therefore, only use a little ink and paper to reply to a few of the insinuations and implications of Mr. Franklin, as contained in the article which we have quoted.

When we recommended this improvement, we only did it to the extent of desiring the profession to give it a trial. We did not recommend it in any way beyond what our own judgment dictated; and that judgment has since been borne out by the experience of many who will testify to its accuracy. We proposed to present the teeth to the profession at a low rate for trial, that their true merits might be decided upon, and any candid reader will see at once that our article upon the subject is entirely divested of all attempt at humbugging the profession, as that we exhibit no desire to speculate upon their credulity by advertising a worthless article.

It is all very well for Mr. Franklin to nominate and elect himself the prophet and saviour of mechanical dentistry, but while the illustrious master in the art, under whom he served to so little purpose, still lives, he will hardly be accepted by the profession as such; and certainly not, if he shall continue to strive to elevate mechanical dentistry at the expense of truth, justice, and honor; discreditably endeavoring to drain the hard earnings of men who were giants in those days when he was a peripatetic vender of small wares, and a wanderer upon the face of the earth—before ever he had entered the first gate of professional honor and character.—Eds.

PROCEEDINGS OF THE EIGHTH ANNUAL MEETING OF THE AMERICAN DENTAL CONVENTION,

AT TRENTON FALLS, AUGUST 5TH, 1862.

FIRST DAY.—FORENOON SESSION.

PURSUANT to a resolution adopted at the last annual meeting, the AMERICAN DENTAL CONVENTION met at Trenton Falls, Oneida County, N. Y., on Tuesday Morning, August 5th, 1862.

The President (Dr. John Allen) being in the chair, called the meeting to order at 10½ o'clock. The following order of business reported by the Executive Committee at the last meeting, and adopted by the Convention, was proceeded with:

ORDER OF BUSINESS.

1. Admission of Members.
2. Reading minutes of the last Convention.
3. Reports of Officers and Committees.
4. Election of Officers.
5. Delivering retiring President's Address.
6. Induction of Officers.

All Essays shall be received to open the discussion to which they relate. No member shall speak more than ten minutes, nor more than twice on the same subject, without permission.

I. *Miscellaneous Subjects.*—1. Anæsthetics, their use and relative value; 2. Alveolar Abscess; 3. The causes influencing an abnormal development of the Teeth.

II. *Operative Dentistry.*—1. Filling Teeth—Simple and Complicated Cavities; 2. The Dental Pulp—its varied treatment; 3. The Extraction of Teeth.

III. *Mechanical Dentistry.*—Artificial Dentures, temporary and permanent.

IV. *Unfinished Business.*

The President announced the first business in order to be the admission of members.

On motion, Dr. B. F. Whitney, of Buffalo, N. Y., was appointed treasurer *pro tem.*, in the absence of the Treasurer.

It was announced, that in consequence of the judicious action of the Executive Committee, there would be a reduction made on the usual entrance fee, of one-half, making it one dollar for each member.

The Secretary, by desire of the Convention, read the Constitution to the members, and it was afterward signed by the following names:

G. N. Foster, Utica, N. Y.
L. E. Brockway, “ “
C. G. Sumner, Norwich, “
D. S. Goldey, Oswego, “
C. A. Hastings, Rio Janeiro, Brazil.
Wm. A. Pease, Dayton, Ohio.
Geo. B. Snow, Hornellsville, N. Y.
E. F. Wilson, Rochester, “
Stoddart Driggs, Lexington, Ky.
L. W. Bristol, Lockport, N. Y.
Geo. W. Ellis, Philadelphia, Pa.
J. Taft, Cincinnati, Ohio.
Frank H. Norton, New York, N. Y.
S. B. Palmer, Tully, N. Y.
Wm. B. Hurd, Brooklyn, L. I.
John L. Clark, Waterloo, N. Y.
B. F. Whitney, Buffalo, “
W. C. Parks, Brooklyn, L. I.
Gabriel Chevalier, New York, N. Y.
W. C. Tremain, Rome, N. Y.
S. F. Tremain, “ “
John Allen, New York, “
F. Searle, Springfield, Mass.
A. Westcott, Syracuse, N. Y.
T. H. Burras, New York, N. Y.
J. A. Perkins, Albany, “
S. M. Robinson, Watertown, N. Y.
W. B. Boberts, New York, N. Y.
M. B. Stetson, Prospect, “
L. W. Rogers, Utica, “
J. H. Smith, New Haven, Conn.
Wm. H. Dwinelle, New York, N. Y.
H. Jameson, Jr., Lyons, “
W. H. Atkinson, New York, “
Corydon Palmer, Warren, Ohio.
—— Perkins, Watertown, N. Y.
J. C. Robins, Jersey City, N. J.
S. Mapes, Fishkill Landing, N. Y.
F. H. Clark, New York, “
Jas. Brown, Rochester, “
B. W. Franklin, New York, “
E. L. Swartwout, Utica, “
C. F. Campbell, Murfreesboro’, N. C.
C. S. Miles, New York, N. Y.
E. M. Skinner, Syracuse, “
G. F. J. Colburn, Newark, N. J.
Monroe Frank, Cortland, N. Y.
M. Tefft, Cambridge, “
James Lewis, Burlington, Vt.
Thos. D. Evans, Utica, N. Y.
W. D. Stone, Lexington, Ky.
A. Jones, New York, N. Y.
John T. Metcalf, New Haven, Conn.
Geo. E. Hayes, Buffalo, N. Y.

J. Carroll House, Lowville, N. Y.
G. Ward Ellis, Chicago, Ill.
John R. McCurdy, Philadelphia, Pa.
E. Beckwith, Westmoreland, N. Y.
T. L. Buckingham, Philadelphia, Pa.
N. W. Kingsley, New York, N. Y.
D. W. Perkins, Milwaukie, Wis.
J. Bowes, Ingersoll, C. W.
N. A. Coe, Theresa, N. Y.
Jas. B. Willmott, Milton, C. W.
Chas. F. Mermier, Brooklyn, L. I.
F. N. Johnson, Philadelphia, Pa.
N. D. Ross, Troy, N. Y
E. A. Bogue, Chicago, Ill.
E. P. Hadcock, Newport, N. Y.
Chas. W. Shapley, Utica, "
J. A. Cowles, Rome, "
A. N. Priest, Utica, "
Wm. H. Allen, New York, "
Chas. H. Neall, Philadelphia, Pa.
A. Hill, Norwalk, Conn.
J. S. Brown, Green, N. Y.
A. W. Kingsley, Elizabeth, N. J.
B. Wood, Indianapolis, Ind.
W. O. Laird, Stettsville, N. Y.
J. P. Beardsley, Clinton, "

It was, on motion of Dr. Bristol, resolved that the names appended to the Constitution should be read aloud to the Convention, the members answering to the call. This was accordingly done.

On motion of Dr. Rogers, it was resolved that Mr. Frank H. Norton be appointed to report the proceedings of the Convention for the "Utica Morning Herald." The minutes of the last meeting were read and adopted.

The next business in order, "Reports of Officers and Committees," was now taken up. Th Corresponding Secretary reported that he had forwarded to the "College of Dental Surgeons," in London, the reply of the American Dental Convention to their invitation of last year, and had received no reply. Gave a synopsis of his correspondence during the past year with Drs. Priest, Rogers, and others, in reference to the business of the Convention. On motion, the Secretary's report was adopted by the Convention. The Treasurer not being present, his report was temporarily dispensed with. The chairman of the committee appointed to consider the practicability of obtaining positions for Dentists in the Army and Navy, reported that there were too many difficulties in the way of conducting the matter at present, to admit of its successful prosecution. A letter from Surgeon-General Hammond to Dr. J. D. White, favoring the project, was read by Dr. Ellis. Dr. Dwinelle referred to a conversation between Dr. Hammond and himself in reference to the matter, also viewing the subject favorably. On motion, it was resolved that the letter of Surgeon-General Hammond be replied to by the Secretary, expressing the thanks of the Convention and their satisfaction at this expression of his sentiments.

Dr. Franklin made some remarks in reference to the same subject, quoting a second letter from Dr. Hammond, still more favorable in its nature. Dr. Burras regretted that the committee had not exhibited more energy, and hoped they would be continued in office, and would exhibit increased action. On motion of Dr. Westcott it was resolved that each member of the Convention should be authorized to act as a special committee to prosecute this matter. On motion, the special committee was continued, Dr. Burras being added to it. Dr. Taft made some remarks in reference to the question under discussion. Stated that already a desire was being exhibited among army officers, that dentists should find positions where their services could be made useful to the army. Already dentists could obtain such positions as would lead to the final result desired. Advised the securing of an enactment admitting dentists into the army as assistant surgeons. Thought it would be well for dentists to make the necessity for them felt, both by the medical profession and the army; and wherever an opening appeared wherein they could make such an impression, it was their duty to fill it.

Further remarks in the same connection were made by Drs. Roberts, Searle, and Perkins, when the next order of business, "Election of Officers," was taken up.

On motion, the course usually adopted in balloting for officers was pursued. Drs. L. W. Rogers and B. F. Whitney were appointed tellers by the chair. On balloting for President, thirty-eight ballots were cast, of which Dr. Amos Westcott, of Syracuse, received twenty-six, and was declared elected. On motion of Dr. Dwinelle, the election was declared unanimous.

The Convention next proceeded to ballot for Vice-President.

On the first ballot Drs. Taft and Roberts received the two highest votes, when Dr. Roberts declined the nomination in favor of Dr. Taft.

On a second ballot, Dr. Taft received twenty-eight out of thirty-four votes, and was declared elected; on motion, the election was made unanimous.

The Convention next proceeded to ballot for Corresponding Secretary. On the first ballot there was no choice, Drs. Roberts, Burras, and Whitney receiving the three highest votes. Drs. Burras and Whitney declining the nomination in favor of Dr. Roberts, Dr. W. B. Roberts was elected on the second ballot, and on motion of Dr. Burras the election was made unanimous. Proceeded to ballot for Recording Secretary. On the first ballot there was no election. Some discussion ensued as to the proper method of conducting the canvass, when candidates declined being nominated. On motion of Dr. Westcott, it was resolved that hereafter each declining nominee of the three highest, should be replaced by a substitute from the next highest. Proceeding to ballot for Recording Secretary, Dr. F. Searle received the highest number of votes, and was declared elected; on motion, the election was made unanimous.

On balloting for Treasurer, Dr. J. C. Robins, of Jersey City, was elected on the first ballot. On motion, the election was made unanimous.

On motion, it was decided the hours of session for this Convention should be from 9.30 A. M. to 1 P. M.; and from 3.30 P. M. to 5 P. M.

On motion, adjourned to meet at 9.30 A. M. on Wednesday.

SECOND DAY.—MORNING SESSION.

The Convention was called to order by the President, at 10 A. M.

On motion, Dr. T. H. Burras was elected Recording Secretary, *pro tem.*, in the absence of that officer.

By request, Dr. W. B. Roberts read the minutes of the last meeting.

On motion, a committee of two was appointed by the chair to correct the minutes, which were found defective; Drs. Stone and Hurd were appointed said committee. On motion, the roll was called, members answering to their names. The Treasurer, John T. Metcalf, now read his report for the past year. Reported that after paying all expenses of the Convention for the past year, there was a balance remaining in the treasury of $40.79. Drs. D. W. Perkins and F. H. Clark were appointed an Auditing Committee, to audit the accounts of the Treasurer.

The order of business was now proceeded with, the *Retiring President's Address* being next in order. Dr. John Allen then proceeded to read the following address:

THE BEST MEANS OF ADVANCING DENTAL SCIENCE.

BY DR. J. ALLEN.

Members of the American Dental Convention:—Another year has passed since our last annual meeting, which has been fraught with events long to be remembered in the history of our country.

The efforts which have been made to sever the bonds of our Union, overthrow this government, divide and alienate us as a people, tell upon our profession, as seen by the absence of many Southern members, who were wont to be with us, and take part in our deliberations, in years gone by; but we trust the time is not far distant when we shall again be united, and all work together in promoting the best interests of our profession and of our common country.

At our last annual meeting, it was my privilege to make some remarks upon the causes which retard dental progress. I will now present a few thoughts upon the best means (as I conceive) of advancing dental science. This can be done by two distinct methods: The one by the united efforts of the profession, and the other by individual effort.

Let the dental practitioners throughout the country act in concert in building up our dental colleges; let them encourage more liberally our dental journals; establish and sustain properly organized dental associations: and by these means dental science will be advanced. I need not detail the advantages that each of these possesses in diffusing dental knowledge among our profession—they are self-evident to every thinking mind. I will therefore dwell more particularly upon individual efforts, as a means of advancing dental science; for we should not only avail ourselves of all that can be taught and learned from others, but we often find it necessary to draw largely upon our own mental resources, to enable us to accomplish our purposes; for such is the peculiar nature of our profession that every successful practitioner must rely upon himself to devise ways and means to meet the various exigencies that are constantly presenting themselves in dental practice. Cases frequently occur, for which he may seek in vain to find in books exact parallels to those requiring his aid. He must then fall back upon his individual resources to guide him in the accomplishment of the object to be attained. It is, therefore, necessary that he should know himself; he should know his own mental organism and its powers, as well as those of his corporeal system.

The human senses, as every one knows, are five in number, and each communicates its proper sensation. It is by the eyes that we see, by the ears that we hear, by the nose that we smell, by the tongue and palate that we taste, and by the sense of touch that we feel; and every anatomist knows that in order to produce sensation upon any one of these senses, the impression is first made upon the organ; the organ serves only as a medium to convey it to the nerves, and the nerves, serve as a medium to carry it on to the brain. Here the corporeal part ends; the rest is all intellectual. Here we enter another field of observation, and we discover that the mind has the power of turning its attention upon itself, and there learns the nature, manner and power of its own operations.

There are certain faculties of the mind entirely different from the five senses, such as perception, thinking reasoning, knowing, willing, and also all the different energies and passions of the mind. It is to these intellectual faculties that we invite special attention; for herein lies the great power of advancing all sciences. It is the power derived from the exercise of these faculties that man has been able to devise means by which he can fathom the depths of the ocean, determine the diameter and circumference of this and other worlds, determine the distances of the various planets from each other, and the momentum with which they travel through space.

It was through his individual efforts that Herschel was enabled to extend his astronomical observations far beyond those of his predecessors, and bring to view other planets, previously unknown to man. It was through the medium of his own mind that Rittenhouse first calculated eclipses on his plow-handle. It was the individual efforts of Morse (aided, perhaps, by other suggestions, comparatively insignificant), that enabled him to develop the principle by which ideas can be transmitted with lightning speed from one distant point to another. It was by the strength of his own reasoning powers that Columbus discovered the American continent.

These, and many other examples that might be given, show the wonderful power and capacities of the human mind to work out things which would appear to casual observers as impossibilities; but the human mind is so constituted that it can work upon and within itself, and by this means important principles can be brought to light. This is the central thought that we wish to present with reference to individual efforts as a means of advancing dental science. Man, know thyself, is an injunction applicable to each one of us; our Creator has endowed us with mental faculties, which we ought to understand, and we should study them assiduously; we should cultivate and strengthen them, that they may be relied upon when brought into requisition. To advance beyond our present stand-point, we should first acquire a thorough knowledge of that which is now known and rendered available through the medium of books, colleges, associations, etc. And, when these external resources shall have become exhausted, then direct the thoughts inwardly, amid the hidden recesses of the mind, with a view to discover still higher practical points than those acquired from other sources.

Gibbon says, "Every person has two educations—one which he receives from others, and one more important, which he gives to himself." It is this self-culture that should be relied upon more than any other for advancement, for if none go beyond where others have gone, there will be no advance. It is the neck ahead that wins the race.

This brings us to the consideration of original ideas, or those which may have been suggested to the mind by some external object or circumstance. In either case, they should be fostered with care. Good ideas often perish for want of nourishment. In such cases, there has not been a sufficient amount of reflection bestowed upon them to mature the conception. In order to develop an idea, it should be cultivated with patience; it should be cared for, turned and re-turned in every direction, looked at in all its aspects, placed in its various relations, scrutinized in all its dimensions and proportions, then clothed with a body. After this is done, then test its merits; note the results; strengthen the weak points; devise means to overcome unforeseen difficulties. "Labor and wait" until sufficient time shall have elapsed to fully develop the principle involved.

When an idea is first conceived, it is usually vague and chaotic—a mere germ; but by revolving it over and over again in the mind, it gradually unfolds like a thing of life, and we then begin to see whether it possesses merit and practicability. If we can discover that it does, we should not let it flit away again void as it came to us, but carefully nurture and cherish it, for it may develop a principle of great importance. You recollect when Franklin discovered the identity of lightning and electricity, it was sneered at, and people asked, "Of what use is it?" To which he replied, "What is the use of a child? it may grow to be a man!" Give heed to these little silent messengers called ideas, that gently come gliding into the mind, for they may prove to be of incalculable value. They may reveal important principles not to be found elsewhere. It was these silent whisperings that disclosed to Newton the principles of astronomy! To Archimedes the means of determining the distances between the different planets! and to Fulton how to propel the steamboat. It was an idea that enabled Whitney to make the cotton gin, and Jenner to prevent smallpox by vaccination. Thousands of instances might be given in every branch of science and art, where individuals, by their own efforts, have made valuable discoveries or improvements, by simply carrying out practical ideas. True, in many instances they were attended with great labor and expense, for it is only the bare idea that first comes into the mind; the minute details all have to be wrought out by those who receive them; but the ends, when accomplished, have fully justified the means employed. The man who becomes the humble instrument for developing an important principle will often meet with difficulties and trials almost insurmountable; but by keeping his mind's eye steadily fixed upon the idea as his pole-star, and gradually working his way onward by the light which it reflects, he may have the pleasing satisfaction of seeing his efforts ultimately crowned with success.

Newton, on being asked by what means he had worked out his extraordinary discoveries, replied, "By always thinking unto them." At another time he said, "I keep the subject continually before me, and wait till the first dawnings open slowly, by little and little, into a full and clear light." In these few words he has given us the key with which to unlock the citadel of the mind, and bring out hidden treasures that might otherwise have remained concealed. There are those who conceive good ideas, but their restless spirits will not permit them to wait patiently, and labor on perseveringly, until practical results are obtained, and they abandon them, because of the slow progress of their development. Such men have not the patience and perseverance which is necessary to change the mulberry leaf into satin. "Alas!" said a good old lady, speaking of her brilliant but careless son, "he has not the gift of continuance." This may be said of many who have strong powers of conception, but their working qualities are not well trained, and their ideas perish in darkness.

> "See first that the design is wise and just,
> That ascertained, pursue it resolutely;
> Do not for one repulse forego the purpose,
> That you resolved to effect."

Let each member of our profession apply these principles to himself, and put forth his own personal efforts with a view of doing something that will tend to advance our cause.

"It is not enough," said John Locke, "to cram ourselves with a great load of collections; unless we chew them over again, they will not give us strength and nourishment. That which is put into us by others is always far less ours than that which we acquire by our own diligent and persevering efforts. Knowledge, conquered by labor, becomes a property entirely our own, and of great practical importance to those who possess it."

> "Knowledge dwells
> In heads replete with thoughts of other men:
> Wisdom in minds attentive to their own.
> Knowledge, a rude, unprofitable mass,
> The mere materials with which wisdom builds.
> Till smoothed and squared and fitted to its place,
> Does but incumber whom it seems t'enrich."

In conclusion, allow me to return to you my sincere thanks for the kind forbearance and attention you have extended toward your retiring President, during his official term of service with you. And may that spirit of harmony and unanimity which has heretofore characterized your deliberations, continue to be a prominent feature in all of your subsequent meetings. And may your future discussions not be of that kind which leaves the heart cold and the head empty; but may they teem with wisdom's words, and fill the mind with mental food. And when long years shall have passed away, may we still look back with fond recollections upon these annual convocations, as some of the green and pleasant spots in the horizon of our memories.

Drs. L. W. Rogers and W. D. Stone were appointed a Committee to conduct the President elect to the chair.

Dr. Amos Westcott was therefore introduced to the Convention by Dr. Rogers with a few remarks.

The President referred to the address of Dr. Allen in the highest terms. He did not come here to make speeches, and felt his inability to compete with the retiring President. He tendered his sincere acknowledgments to the Convention for the high honor they had conferred upon him, by his election to the present office by a body so dignified as those here representing the Dental profession. The speaker next referred in appropriate terms to the absence of the Southern members of the Convention. The political and social condition of the country had so greatly influenced our sentiments, and so filled our minds, that we could not have expected such a representation of our profession, and it was in the highest degree creditable that the fact should exist. Dr. Westcott next referred to his past connection with similar societies, and spoke particularly of his first entrance into the old "Dental Society;" from the Constitution of that Society he desired to borrow two articles, which he thought might best be taken as the standard for this Convention: "The elevation of the Profession," and "the suppression of quackery." He referred to the elevation of dentistry as a profession, and not as a trade. We must make this distinction, and also teach the community to make it.

The speaker next referred to the importance of information, both intellectual and scientific, to the dentist; many branches of the profession required the application of mechanical knowledge and skill; indeed this profession includes all trades; yet the dentist's mind should not be so confined to these mechanical labors, as to permit them to belittle him as a man. The meetings of this Convention ought to stimulate every dentist to do his best.

He desired particularly to impress this association with the necessity for individual effort. Associated effort was made up of individual effort, but association was necessary to the prosecution of every great object. Referred to associated effort as exhibited in railroads, telegraphs, &c. Reprobated the practice of "stealing thoughts from the telegraph wires," which was sometimes exhibited in this Profession. Again expressed the hope that this Association would do every thing to "elevate the Profession, and put down quackery." Every society should put down clique-ism; in this connection he referred to the influence of the Amalgam question upon the old Society, and warned the Association against all such influences. Advocated the setting up of "professional elevation" as a mark for all to look up to, and concluded his remarks.

Dr. Dwinelle then rose, and referring to the President's Address, endorsed his views heartily. Quoted the motto of the old Society, "The elevation of the Profession, and the suppression of quackery." On entering the Profession, he felt that he had received a large bounty from his predecessors. They had generously poured into the lap of the Profession the fruits of their past labors, and the Profession in return, should pledge every thing to each other and the world. He had always looked with jealousy on every thing that tended to degrade the Profession.

Dentistry had, during the past twenty years, made great strides, and now stood on a common platform with other liberal professions; and we were thus bound to take a high stand ourselves. The speaker then moved the adoption of the following preamble and resolutions:

PREAMBLE.

Whereas, The dignity and good name of our Profession has been assailed, in times past, by those who would prostitute the honor of our noble calling to base uses; and

Whereas, Through an almost criminal weakness and supineness on our part, we have, unwittingly, been made the instruments of increasing this evil until it has reached an alarming extent; and

Whereas, This evil has shown itself, especially of late, in the countenance and aid that has been given to the practice of forcing upon us the use of certain patent-rights, sometimes by threats, until tribute is paid, and sometimes, upon influential members, by presentation, patents upon articles either worthless in themselves, or by right of prior invention belonging to the Profession, or patents in themselves otherwise invalid; and

Whereas, Our reproach is being daily augmented by these practices, until we are obliged to rise in our might to protest against it, and prevent any further disgrace. Now, therefore, be it

Resolved, By the American Dental Convention, representing the whole body of the Profession, throughout the country, that it is our duty, in view of these facts, to, here and at this time, in behalf of those we represent, strongly and firmly protest against all such action as we have mentioned, or shall hereafter discover, as dangerous, fraudulent, and dishonorable, and that the system of patents, when thus prostituted to nefarious purposes, is a reproach from which the Profession must be purged.

Resolved, That we do endorse all action that has been, or may be taken, by any individual, or body, in our profession, having for its basis such protection of the standing and interests of the same, and such reprobation of all that is injurious and unjust to them in this matter.

A motion to lay these resolutions on the table was voted down; considerable debate ensued, when, on a call for the previous question, by Dr. Rogers, the preamble and resolutions as written, were passed by the

Convention, by a vote 29 to 20. On motion, a resolution of thanks to the retiring officers was then passed, and the incoming officers were introduced to the Convention.

After a short recess, the Convention proceeded to take up the regular order of business, being the discussion of the subject of "*Anæsthetics*, their use and relative value."

Dr. Rogers stated that he used chloroform as an anæsthetic, but not ether, except in connection with it. He had been extremely successful in its use, but gave two cases of slight disturbance of the health of the patient resulting from the use of chloroform. Thought he had given chloroform in more than 2,000 cases. Did not always aim at perfect insensibility. Dr. Stone stated that in the Eastern states chloroform was most given, in the South and West ether. Dr. Rogers then gave his mode of administering chloroform. First quieted his patients, taking from them all fears as to the results; if the patient was apprehensive, the effect was injurious. Applied sweet oil to the nose and nostrils; next wet a handkerchief with water, and poured chloroform upon it; then held the nose of the patient, to keep the mouth open. Watched the breathing carefully, and acted according to circumstances. Occasionally felt the pulse, desiring that it should be free and quick.

Preferred that the patient should be in a partially unconscious state, and having established this condition, lanced around the gums, and if there was no appearance of pain, proceeded to extract the tooth. Aroused the patient in the usual manner.

Dr. Colburn condemned the use of chloroform, and used ether in his own practice. Had probably administered ether, on an average, once a day for the past sixteen years. But had only used chloroform for nine months on its first discovery; had then given it up for fear of consequences. Had met with no cases of death from the use of ether, and had never heard of any such cases being well authenticated. In administering ether was guided chiefly by the tremulous motion of the eyelids. Dr. Kingsley, of New York, referred in complimentary terms to Dr. Peasley, of New York, in connection with the subject under discussion. Stated that at the New York Hospital ether only was given.

Among conscientious physicians and surgeons, chloroform was not used. Under ether patients sometimes got too much exhilarated. Dr. Peasley's experience was, that when the patient was strongly urged not to talk during the operation, no objectionable effects resulted; in no instance had he seen this fail; the patient being invariably quiet, and easily controlled. Under such circumstances, believed that ether was perfectly safe, but did not think that chloroform was. Dr. Dwinelle stated that in Europe chloroform was more commonly used, and in this country ether. Thought the mode of using was of great importance. Mentioned the fact, that in the Middlesex Hospital, London, chloroform had been given 10,000 times, with but one case lost. The speaker had been connected with Dr. Morton in the early period of his investigations, and had profited by his experience. Gave both ether and chloroform himself, the former in long operations, but usually gave chloroform. Had administered them in about 1,100 cases, without death or injurious effects. In his experience had found that the last thought previous to Anæsthesia was the ruling thought throughout the condition, and he therefore always directed that thought, making it as agreeable as possible. His first point was, that his patient should sit in an upright position, and that the anæsthetic should be given on an empty stomach. Sometimes asphyxia was produced when in a reclining position.

Watched the patient while administering, his test being to see if the eyes remained fixed when pressure is made by the finger on the eyeball. There were cases when the patients would cease breathing; in such cases he induced them to breathe by requesting the patient to do so. Examined the pulse frequently. If the patient could not be forced to breathe, induced artificial respiration, by pressure and other mechanical means. Thought that in many cases where death ensued under anæsthesia, it was caused by neglect. Always gave the very best quality of chloroform, and never gave anæsthetics unless absolutely necessary. Dr. Hayes had been in the habit of applying chloroform locally in the extraction of teeth. First lanced the gums, and then applied the chloroform in a wad of cotton on an excavator. When the pain of the application ceased, he extracted the tooth. Was satisfied that all the good effects of chloroform could be obtained without insensibility, and experience showed that the pain was greatly lessened by local anæsthesia.

Dr. Ellis, of Chicago, did not like to administer either of the anæsthetic agents; when he did use any, had preferred chloroform, until he met with unpleasant results, and abandoned it for ether. Thought the dentist should discourage the use of either.

Dr. Whitney had a mode of folding a napkin for etherizing.

Dr. Foster, of Utica, had recently used chloroform in connection with ether, but administered very cautiously. In giving in this way, he mixed in equal proportions.

Further discussion ensued upon the subject before the Convention, being conducted by Drs. Perkins, Dwinelle, Foster, John Allen, and others.

Dr. Allen thought that in anæsthetics, the most subtle agent was the most dangerous. The effect of anæsthetics being to drive the blood from the arterial to the venous system, and so through the capillaries upon the brain. Gave a case which occurred in Cincinnati, where death having followed the use of chloroform, on a post-mortem examination, the heart and aorta were found destitute of blood, and the brain suffused.

Dr. W. B. Roberts had used various anæsthetics, but preferred chloroform. Gave his mode of administering, which was on a napkin, not touching the nostrils; thought the nostrils should be left open, that the air might mix with the chloroform; objected to the manner of using the napkin proposed by Dr. Whitney; viz.: covering the mouth and nostrils; thought the position of the patient contributed much to good or bad results, following the use of chloroform.

On motion, the meeting then adjourned.

AFTERNOON SESSION.

The Convention was called to order by the chair at 3.30 P. M.

The subject of *anæsthetics* was resumed by Dr. Rogers. In ordinary cases he would not advise the use of chloroform; as to the number of deaths under its effects he had never met with but three separate authenticated cases in dental practice. In the grand operations in surgery, there were doubtless frequent deaths, but such cases occur as frequently without the use of anæsthetics. Much of the injury caused by chloroform had been owing to injudicious use and treatment.

Dr. Perkins, of Albany, N. Y., was opposed to the use of chloroform. Had used it with success, but learning of cases occurring where death ensued, induced him to refrain from using it to some extent. Believed that it was possible for death to ensue in all cases. Latterly had been in the habit of throwing the responsibility on the patient or family physician.

Dr. Bogue did not use chloroform because it took too much trouble and time. He conceived, however, that there was little or no danger resulting from chloroform, if properly used. If the aeration of the blood were stopped by chloroform or otherwise, death would ensue. Referred to the frequent existence of impure agents in chloroform, and the necessity of only using that which was pure. Also referred to the interruption of digestion sometimes consequent upon its use.

Dr. Perkins, of Milwaukie, stated that chloroform was the cause, through its action on the blood, of temporary congestion of the brain. Referred in this connection to the physiological effects of alcohol upon the system. Stated how the chloroform, acting through the blood, congested the cerebral nerves. It was first necessary to know the condition of the system. If there were congestion of the brain previously existing, or determination of the blood to the head, or similar disease, he never gave it; as chloroform acted to encourage such diseases. In tendency to consumption, however, he would not hesitate to give it.

Considered that chloroform was, taken all in all, the great benefactor of the nineteenth century. As a test he usually caused the patient to hold up his hands, resting on the elbow, until they fell under the influence of the anæsthesia. As to attitude, he kept the blood from going down the throat.

Dr. Franklin thought the first thing to be determined in the administration of chloroform or ether, was the possibility of endangering life; if such possibility seemed to exist, he would not use it. Believed ether could be used without that possibility, and preferred ether to chloroform. Washed his ether thoroughly, when it became as pleasant to administer as chloroform. Thought after such washing anæsthesia could be produced by ether as well as by chloroform. Always found difficulty when he administered it after a hearty meal.

Dr. Dwinelle referred to the number of deaths which occurred after taking chloroform, but thought we should consider, *per contra*, how many thousand lives are saved by its use. It counteracted the effects of strychnine; a specific for tetanus and bilious colic, and a most important agent in setting limbs, amputations, &c., where the nervous system would certainly be shattered from intense pain, and death ensue.

Dr. Palmer was opposed to the use of either anæsthetic. In protracted cases thought the use of chloroform was disadvantageous, and in such cases would not use it. On the whole, preferred chloroform. Spoke of the importance of having the patient alone, and under the sole influence of the operator.

Dr. Stetson said that sensation left the body before consciousness, and therefore never pushed the effects of anæsthetics to unconsciousness. Gave cases of resuscitation under asphyxia.

Dr. Tefft advocated the use of chloroform as a local agent, and believed its effects to be good.

Dr. W. H. Atkinson said that we sometimes gave chloroform too rapidly, and thus caused death. Sometimes the tongue would fall back and produce asphyxia. Considered the absence of blood from the heart and aorta as not necessarily caused by chloroform. In difficult cases would use ether, and in case of trouble use chloroform in connection with it.

Dr. A. W. Kingsley, of Elizabeth, N. J., gave a case where ether was administered with a glass inhaler; in a few moments observed dilation of the pupil, stertorious breathing, and intense action of the heart. Called in two physicians, and used all the known remedies for congestion of the brain. The patient never entirely recovered from the effects. Found that the patient had eaten nothing for twenty-four hours, and hardly any thing for a week; attributed the result to this circumstance. Never gave ether since, but gave chloroform when recommended by the family physician.

Dr. Searle spoke of the extensive use of chloroform in operations in our armies, and stated that there had been no evil effects from its use upon the soldiers; had obtained his information from a medical director in the army. Considered that the patient should be devoid of all fears of chloroform. Under proper circumstances would give it without the slightest hesitation. Always gave it slowly, never depriving the system of air. Objected to throwing the responsibility upon the physician, preferring to take it upon himself. Sometimes gave chloroform from a phial through the nostrils.

The President thought that if you could get along as well without using anæsthetics, it was better to do so; but preferred chloroform to ether. Thought that in extreme cases it should be used by all means. We should be particularly careful in administering it.

Dr. Burras gave his experience in the administration of ether, but presented no new facts. Applied chloroform locally, but not by inhalation.

Dr. Hurd believed chloroform to be a valuable agent, but would not use it in his office; never under any circumstances using it by inhalation, but sometimes by local application.

Dr. Goldey stated a case of death ensuing from the use of chloroform; had used it to some extent, but observing considerable nervousness to follow its use, had abandoned it.

Dr. Swartwout did not use chloroform; thought that patients would take chloroform and have their teeth extracted rather than bear the pain of filling, and thus lose valuable teeth which might have been saved to them.

Subject continued by Drs. Willmott, House, Buckingham, Hill, and Coe.

The President announced the following gentlemen as the Executive Committee for the coming year:

Dr. Wm. H. Dwinelle, New York, N. Y.
" T. L. Buckingham, Philadelphia, Pa.
" W. D. Stone, Lexington, Ky.
" A. L. Pease, Dayton, Ohio.
" D. W. Perkins, Milwaukie, Wis.

THIRD DAY.—MORNING SESSION.

The Convention was called to order at 9½ o'clock, by the President. The minutes of the last meeting were read and adopted. In accordance with the order of business, half an hour was then devoted to the presentation of models, &c.

Gabriel Chevalier exhibited an instrument for heading the pins of teeth used in vucanite work.

B. W. Franklin offered an improved method for securing the head of a vulcanizer.

Dr. Walter B. Roberts exhibited a new safety-valve and thermometer combined, with fusible metal gauge and rubber safety-plug.

Dr. Hayes showed a new method of fastening down the cover of a vulcanizer.

Dr. Whitney presented his vulcanizer.

Dr. Wood being called upon, gave some remarks relative to the formation and fusible points of alloys.

J. D. White's plugging-forceps were presented by Dr. Ellis, of Philadelphia.

The regular order of business was then resumed.

On motion, the chair appointed Drs. Whitney, Taft, Foster, McCurdy, and Stone, a committee to select a place of meeting for the ensuing year.

The subject of *Alveolar Abscess* was taken up, and discussed by Drs. Atkinson, Taft, Westcott, and Stone. The committee on place of meeting reported as their selection Cape May, Bedford Springs, and Saratoga Springs. Adjourned.

AFTERNOON SESSION.

The question of the locality for the next meeting was first considered, and the report of the committee accepted. On balloting for a decision between the three places suggested by the committee, it was voted that the Convention should meet on the first Tuesday in August, 1863, at Saratoga Springs, N. Y.

Some discussion ensued on the propriety of reading a paper offered by a gentleman not present, and therefore not a member of the Convention, when, on motion of Mr. Frank H. Norton, the paper was referred back to the Corresponding Secretary.

On Motion of Dr. Roberts, it was ruled that hereafter, all papers recived by the Convention from persons not members of this body, should be referred to the Executive Committee.

The second section of the second division of the order of business was now taken up, *The Treatment of diseased Pulp.* Dr. Searle stated that he had lately been in the habit of covering the exposed pulp with oxy-chloride of zinc, and in several cases which he had thus treated, had met with great success; stated a case in illustration.

Dr. Colburn confirmed Dr. Searle's statement, believing that exposed pulp could be saved by the proper use of oxy-chloride of zinc.

Dr. Westcott thought that in capping nerves, one substance was no better than another. Considered that after the pulp-cavity was exposed, no healing process went on; it was but another way of destroying nerves. Objected to the principle of capping, as contrary to the laws of physiology.

Dr. Rogers did not approve of exceptional cases, but desired to know if cases occurred sufficiently often upon this subject to warrant our practising the process usually. Gave an instance where the nerve being capped was found devoid of vitality.

Dr. Roberts said that where the pulp-cavity was exposed, he always filled, if there was a possibility of saving the life in the pulp. Believed that dentists often thought the pulp was saved when it was not. Thought that the use of oxy-chloride of zinc must eventually kill the the pulp.

Dr. Hill thought it of great importance to save the nerves if possible. Suggested a case, where the healthy nerve being exposed, he would puncture it. Objected to the use of oxy-chloride of zinc. Would suggest Hill's stopping, or pure gutta-percha.

Dr. F. H. Clark gave instances of normal deposition of bone over the pulp-cavity, in decayed teeth of young people, after temporary filling with tin. The tin, which was first put into the tooth, enables the operator to afterward fill with gold with greater facility.

Dr. Buckingham continued the subject, and was followed by Dr.

Searle, who explained his former statement as being the result of late experience.

Dr. Perkins continued the subject, and was followed by Dr. Pease, who, after numerous experiments in capping nerves, had failed in nearly every instance. Had been most successful with amalgam. Did not believe nerves could be saved by capping in a generality of cases. Dr. F. H. Clark spoke in favor of the preservative qualities of tin. Dr. Perkins thought gold was not in all cases the best material for filling; in some instances had used tin with greater success, particularly with children. Followed by Dr. Westcott, in continuation of the subject.

Dr. Atkinson had frequently found cases of exposed nerves; where, on removing the fillings, he had found secondary dentine. Mentioned cases where he had found this osseous formation, the nerve still living underneath. This deposit was sometimes in granular nebular masses, when it did not afford so good a protection.

Dr. Allen, of New York, asked if ossific deposition could be produced from the lining membrane. Gave instances in animal teeth, where this osseous formation could be found.

Adjourned, to meet on Friday morning at eight o'clock, and resolved to adjourn finally at 12 M. on that day.

FOURTH DAY.—MORNING SESSION.

The Convention was called to order at eight o'clock by the Vice-President, in the absence of the President. The minutes of the last meeting were read and adopted. On motion, proceeded with the order of business. Drs. Rogers and Clark continued the subject under discussion at the last session, the *treatment of diseased pulp*. Dr. Stone stated that he had met with no success in capping exposed nerves. Had used every means with which he was acquainted, to preserve them, but without success. Sometimes found an osseous coating formed over the pulp, which had preserved it. Was latterly in the habit of extracting the nerve. Dr. Stone proceeded to give his method of manufacturing nerve-instruments. Dr. Perkins desired to know by what means the secondary dentine could be induced, and thought the attention of the Convention might properly be directed to that question. Dr. Roberts believed that most nerves capped would die. Thought we ought to save the nerves alive when possible. Gave his manner of extracting nerves, and described the instrument used by him.

Dr. Franklin proceeded to describe a barbed instrument for removing the nerve.

On motion, it was resolved to proceed to the discussion of the subject of *Mechanical Dentistry*, at nine o'clock. Dr. Franklin read a paper on *Temporary Dentures.*

Dr. Roberts proceeded to make some remarks on Dr. Franklin's paper. Was in favor of inserting temporary plates as soon as possible after extraction of the natural teeth. The gums were then not as painful as after being left to perform mastication. We also retained the natural expression of the mouth, and the patient more readily acquired the habit of using his teeth. A temporary set of teeth might produce an abnormal condition of the mouth, but only if improperly made. Gave his method of setting temporary dentures. Approved of a metal base for the plate. Did not approve of the use of vulcanite as a base for temporary sets. Had found that absorption went on under it, more rapidly than under any other substance, owing probably to the substances it contained.

Dr. Palmer spoke in favor of gold plates above all other substances. Had regulated cases, bringing out the natural contour of the face, with gold plates properly prepared. Presented models illustrating his manner of proceeding in such cases.

Dr. W. H. Allen stated that he had noticed several cases where great heat and discomfort had been experienced after wearing rubber sets; and desired to have the reason of these phenomena explained.

Dr. Taft stated that it was because rubber was not a good conductor of heat. Had himself noticed such cases, the gums being red and tending toward inflammation.

Dr. Perkins gave an instance of extreme absorption of the alveolar ridge, and his method of obviating the difficulty.

Drs. Roberts, Stone and Taft continued the subject.

Dr. Whitney spoke in reference to temporary dentures, which he was accustomed to set as soon as possible after extraction. Did not approve of an air-chamber. Had used all materials, and found as good results from one as another; thought if there was any difference, it was in favor of rubber. Left the time of wearing plates to the discretion of the patient. Had found the difficulty alluded to by Dr. Allen in all materials, and in rubber less than any. Stated a case in his experience similar to that mentioned by Dr. Perkins, of great absorption of the alveolar process.

The subject was continued by Dr. Clark, and at ten o'clock twenty minutes were allowed for the presentation of models.

Dr. House exhibited a compact and convenient case for dentists, to contain instruments and all the necessary appliances for operations and artificial work.

Dr. Snow exhibited a very simple and neat contrivance in the form of a water-bottle for wetting corundum wheels. The bottle being half filled with water, and turned on its side on a wire frame, was stopped by a sponge; a small hole drilled through the upper side of the bottle was covered by an India-rubber band passing round the bottle; sliding the band from the hole admitted the air into the bottle, driving the water into the sponge, which was brought nearly in contact with the wheel. To dry the sponge, turn the bottle with the hole under, first covering it with the band.

Dr. Palmer continued the explanation of his models for regulating the contour of the face.

Dr. Roberts proceeded to make some remarks on the effects of rubber upon the mouth, stating that the bi-sulphuret of mercury contained in the coloring matter caused the mouth to become heated and inflamed as before mentioned. With the rubber prepared by the American Hard-Rubber Co. before vulcanization, he could salivate the mouth, and he denied that the mercury could be disposed of entirely by vulcanizing. He considered continuous gum preferable to any other substance for artificial teeth.

Dr. Franklin spoke in favor of rubber-work.

Dr. John Allen was in favor of a high class of artificial work, against cheap sets, which were a walking advertisement that the wearer had artificial teeth in his mouth. Proceeded to give a careful description of his method of making and setting continuous gum sets. Was in favor of setting temporary sets as soon as possible after extraction.

Dr. Burras followed in favor of rubber-work; and by permission of the Convention read an article on *extraction of teeth.*

Dr. Hayes spoke in reference to rubber and other substances as a base for teeth. Thought that in some cases rubber was very good, but in others it was not fit to put in the mouth.

Some animated discussion now took place in reference to the merits and demerits of rubber-work, and its effect upon the standing of the profession; in which Dr. Taft took occasion to state that in his opinion rubber was working incalculable injury to the profession, and was indeed a curse to it. By reducing the price of artificial work, it induced patients to take that which was bad in preference to that which was good, thus deterring men from working honestly, and driving all the truly scientific men either to leave the profession or to debase themselves by furnishing work at a price at which no good work could possibly be done. No man could put up an artificial denture of any material, that could possibly answer the purpose for which it was intended, at any such price. It injured the profession in other ways; it destroyed operative dentistry, and the desire to save the natural teeth, which was the noblest end and aim of dentistry; since no one would bear the pain and expense of operations, when for a few dollars he could obtain an entire new set of teeth, with the reputation of the maker to insure its good quality. If this course continued, the result would be that our operators would be turned out of doors, and there would be in another generation nothing but artificial sets of teeth worn. As for himself, he sought to induce the public to take proper care of their natural teeth, and thus avoid the necessity of wearing those which were artificial.

The speaker was followed by Dr. Westcott, who expressed his reprobation of the entire system of rubber-work, and would desire that this Convention should take some special action expressing this sentiment, and condemning the whole practice of using the article in question.

Both these gentlemen were unanimously applauded at the expression of these sentiments, leaving no doubt that the American Dental Convention was thoroughly and entirely opposed to the use of rubber for a base for artificial teeth, in view of its past and prospective effects upon the standing of the profession.

The report of the Executive Committee was next read and adopted, when the Convention adjourned to meet at Saratoga Springs on the first Tuesday in August, 1863.

ENTHUSIASTIC WAR MEETING HELD BY THE AMERICAN DENTAL CONVENTION,

AT TRENTON FALLS, AUGUST 6TH, 1862.

On Wednesday evening, the American Dental Convention assembled pursuant to call, at Moore's Hotel, Trenton Falls, for the purpose of expressing the sentiments of the dental profession, through its representatives, on the question of the rebellion now existing in this country, and to assure the government and the country of the allegiance of this profession to the Union.

The meeting was called to order at nine o'clock, by the President of the Convention, Dr. Amos Westcott, of Syracuse.

On motion, the following gentlemen were unanimously elected to act as Vice-Presidents and Secretaries of the meeting:

VICE-PRESIDENTS:

Drs. G. N. Foster, New York; D. W. Perkins, Wisconsin; J. Taft, Ohio; W. D. Stone, Kentucky.; A. W. Kingsley, New Jersey; J. T. Metcalf, Connecticut; F. Searle, Massachusetts; J. R. McCurdy, Pennsylvania; J. M. Ellis, Illinois; Benj. Wood, Indiana; C. F. Campbell, North Carolina; James Lewis, Vermont; John Allen, New York.

SECRETARIES.

Frank H. Norton, F. H. Clark, New York; W. A. Pease, Ohio; J. H. Smith, Connecticut; T. L. Buckingham, Pennsylvania; G. F. I. Colburn, New Jersey; S. Driggs, Kentucky; L. Q. Brockaway, L. W Rogers, T. L. Clark, New York.

The President appointed the following gentlemen a committee to draft resolutions expressing the sentiments of this meeting:

Drs. W. H. Dwinelle, T. H. Burras, L. W. Rogers, W. B. Roberts, Geo. E. Hayes.

The committee having retired to prepare the resolutions, the President rose and stated the objects of this meeting. The American Dental Convention, being convened here for purposes connected with their profession, had deemed it proper to express their sentiments on the questions now so deeply interesting this country, and to embody in some permanent form their determination to uphold the honor and integrity of the Union at all hazards. The President then informed the meeting that a glee club, present from a neighboring village, would favor the meeting with a patriotic song. This announcement was followed by a song, sung by three voices—the sentiment of which was admirably adapted to the occasion, while the manner in which it was sung reflected great credit on the musical ability and culture of the performers.

After the song, a cannon in front of the hotel boomed loudly, and drums and fife infused spirit into the meeting.

Dr. Foster, of Utica, now introduced to the meeting Hon. Chas. P. Kirtland, of New York, who was received with acclamations, and proceeded to address the meeting. We would be happy, if space permitted, to present the remarks of this gentleman, and those who followed him, in full. They all breathed the same spirit of determination to avenge the blood of our countrymen, and uphold the honor of the Union, and gave ample evidence of the loyalty of the speakers, and in the case of the dentists, of their profession as a body.

Judge Kirtland was followed by the Chairman of the Committee on Resolutions, who presented the following preamble and resolutions, which were unanimously adopted by the meeting, and followed by three cheers for their sentiment from the whole audience.

Whereas, The present condition of this country is of a character to awaken the latent patriotism in the breast of every man who deserves the name of an American; and, *whereas*, The whole country is called upon to arouse, and rise to the exigencies of the occasion, putting forth her whole strength, girding on her armor, and going forth to battle with but one purpose, to preserve untarnished the honor of our country, and unstained the stars and stripes of her banner; and, *whereas*, It becomes the duty of every good and true man and every body of men to show their colors, and let the world and our country see what a nation has been aroused; and, *whereas*, We, representing the body of the Dental profession of the United States, feel it our duty at this time to place on record our unswerving and unchangeable determination to remain true to our country as long as her great heart shall beat and her arteries send life and vigor all over her broad expanse.

Now, therefore, be it *resolved*, That the American Dental Convention assembled here, do declare their true and determined allegiance to this Union, in sickness and in health, in strength and in weakness, in life and in death; and that, come what may, we will uphold the spirit and meaning of the Declaration of Independence and the Constitution of the United States, and aid and assist our government and our people to once more reinstate the strong government of our country, with a firm reliance and trust in that God who will never let any good thing perish off the face of this earth.

Resolved, That we are for the Union without conditions, and will give support to the government in all the measures it may in its wisdom adopt for the suppression of this most unholy rebellion.

The following additional resolution was then read by Dr. B. W Franklin, of New York, and adopted by the meeting.

Resolved, That if in the prosecution of this war for the permanent establishment of free institutions over the entire territory of the United States, it shall become necessary to exterminate the entire race of rebels, the act would find justification on the ground of having a decent regard for the rest of mankind.

The President announced that the dentists present represented thirteen states. Dr. Atkinson, of New York, was now called upon, and made a few remarks, followed by a new patriotic song from the glee club, which received unbounded applause.

Dr. Stone, of Kentucky, next addressed the meeting, giving a graphic account of the condition of things in Kentucky, and the trials and sufferings of the loyal men of the state. He also drew a portrait of Morgan, the guerilla chief, and gave an account of his daring exploits, in the most interesting language.

Dr. Stone was followed by Drs. Perkins, of Albany and Wisconsin, and Dwinelle of New York, and the speeches were concluded by an address from Rev. Mr. Harvey, Chaplain of the 62d N. Y. regiment, who gave a lengthy description of the battles before Richmond, of which he was an eye-witness, and presented a vivid picture of a soldier's life in actual war. He concluded in the most eloquent manner by entreating those present to go forward and labor in the cause, begging the young men to enlist, and the old men to send their sons to fill the places of those whose bones were rotting in the soil of Virginia, or who were pining and dying in the hospital.

On concluding, the speaker was greeted with nine cheers, and many gentlemen crowded about him to grasp the hand of one who so evidently spoke from a true feeling of self-sacrificing patriotism. After the "Star Spangled Banner" by the glee club, and three cheers given to them and the drummers and fifers, who had so ably assisted on the occasion, the meeting adjourned *sine die.*

There were many peculiarities which rendered this meeting one of exceeding interest. Coming as it has spontaneously from representatives of a large and influential profession, at a time when the last order of the President has rendered every man liable to be called on for actual service in the field, it shows the deep-seated loyalty of the American people.

The surroundings of the scene, the bright moonlight, the flickering lamps and torches, the dense foliage and beautiful landscape, and, above all, the distant roar of the eternal Falls—all combined to lend a peculiar charm to the scene and the occasion, the effect of which could be easily read in the hundreds of intense faces forming the centre group. Let this meeting have its effect upon the young men of Oneida county.

EDITORIALS AND CUTTINGS.

THE AMERICAN DENTAL CONVENTION.

The eighth annual session of this body took place at Trenton Falls, N. Y., on Tuesday morning, August 5th, and continued until noon of Friday, August 8th.

In many respects this was one of the most interesting of all the meetings of this Convention, both from the number who attended it and the interesting character of its proceedings. At one time there were as many as one hundred members present, eighty being registered on the roll of the Convention. Taking into consideration the serious condition of affairs at the present time, and the fact that all eyes and all thoughts are turned toward the operations of great armies in the field, and other great armies in process of formation; with rebellion at home, and possibly foreign war staring us in the face from abroad; with high prices, enormous taxation, and all the necessary adjuncts of great national crises on every side; it was, indeed, wonderful that so many of our profession could be brought together to calmly discuss matters appertaining to their profession. And not alone did they devote themselves to this, for, as will be seen by our full report, elsewhere given, the convention held as enthusiastic a *war meeting* as any in the country, and announced their patriotism and devotion to their country, while they were proving their interest in their profession. In our full report of the proceedings of the Convention it will be seen, too, that the stand we have so long and so determinedly taken against the

Hard Rubber faction, and their pretended patent-right, was fully sustained by the American Dental Convention, both in the resolutions passed on the second day of the session, and in the earnest speeches against the hard-rubber made by Drs. Taft, Westcott and others, on the last day. Indeed, very little was required to obtain the passage of a resolution condemning the practice of using the base compound, but that last indignity was generously spared the adherents to rubber, in consideration of what they had already suffered. We do hope that this action on the part of the Convention will be a lesson to them, and that they will go and sin no more, but will be present at the next Convention, at Saratoga Springs, with clean hands, purifying their mouths, which have so long spoken injury to the Profession, with pure draughts of life-giving waters from the "Congress spring."

THE NEXT AMERICAN DENTAL CONVENTION.

Experience the best tutor is an old adage. When the American Dental Convention was first formed, it was conceded that if held upon the first Tuesday in August, at a proper place, much more good would be accomplished, from the fact that a greater number of dentists would be able to participate in its gatherings, as it was the custom of many to take a few days for recreation in the month of August. We think that this view of it has been fully proven by the past eight years of its meetings. We have had one in Philadelphia, one in New York, one in Boston, one in Cincinnati, one at Niagara Falls, one at Saratoga Springs, one at New Haven, one at Trenton Falls, and the next one is again to be held at Saratoga, showing that a preference is being given to large watering-places easy of access, and where a sufficient number of hotels may be found to accommodate the large number who generally attend these meetings. Many if not all the places that have heretofore been selected for this purpose have been exceedingly pleasant; yet at some we must say that there was not sufficient hotel room. This was severely felt at Trenton Falls, where two hotels were all the accommodation at hand for the convention, besides several hundred pleasure-seeking guests. Good rooms and sleeping apartments commanded a high premium, cellars and observatories, attics and parlors were considered by those fortunate enough to secure such, as A No. 1. Those who were not so fortunate were content with the next best—a stand beside a large tree in the woods near by. We took compassion on a few of the latter class, and occasionally gave one-half of our bed to an unlucky brother dentist. By what means or vote the convention was called at this place no one could tell. There is no doubt it was done from the fact that most of the dentists knew there was a Trenton Falls, but did not inquire whether there were any houses there. Many felt aggrieved at these accommodations, and seemed to think better provision could have been made by the landlord; but where there are more people than room to accommodate them, we cannot see what better could have been done, except that the bargain made by the committee of arrangements should have been scrupulously lived up to by the proprietor of the hotel, in regard to the price to be paid, which was increased fifty cents per day without the consent of the contracting parties. Whether this is according to honor and justice we leave others to judge. The lesson learnt at Trenton Falls will serve to guide the convention in its future selections for holding its annual meetings. The first-fruits are seen by selecting Saratoga Springs, where hotels are plenty, and, if full, every house at this season of the year is converted into a hotel on a small scale. It is a place easy of access, and a central point for the East, Canada, and even the West. The water will be of great service to all who are careful to use it before breakfast; and for a class of men, like that of dentists, who are confined in their offices the year round, with but little exercise, we do think a week at Saratoga, at our next annual meeting, will prove a benefit to their physical as well as their mental powers. We hope (should we live so long as next August) to see hundreds of dentists gathered together for the purpose of professional discussion, and when their labors are over not to hurry home, but to remain away at least two weeks, or more, take a trip to Lake George, the Adirondacks, Montreal, Quebec, or the White Mountains, and we can assure all who will do so, that when they return to their homes they will feel refreshed and take hold of work with renewed vigor and energy, and while toiling over some perplexing, ugly job, will reflect upon the beautiful scenes they have witnessed, and call to mind some one whose acquaintance they perchance have made at the convention, in a *railroad car*, a *steamboat*, or by the *mountain side*, or *waterfall*, and will feel that other spirits live, love, sympathize, and are loved; they will also realize that the world extends far beyond the horizon of a dental office, and that it contains more than *teeth*, *decayed teeth*, *artificial teeth*, or *toothache.*

VULCANITE AND ITS VICTIMS.

We were expecting, until a late hour, to continue our article, No. IV., on the above subject; but, owing to the amount of labor bestowed upon this number, it being nearly all original matter, we were obliged to defer it until our next issue, when we will be able to give our readers a rich programme, as the Chieftain of the Rubber Clan has furnished us with a vast amount of material, in his great effort, to counteract the effects of our March Number, in which we exposed the great humbug *Toland Decision.* His last strategetic movement having been completely annihilated by our Number III., and the American Dental Convention, we shall wait patiently to witness his next, and probably his last spasmodic effort to regain the confidence of the dental profession, so that another $50,000 may be secured from the hard earnings of the confiding and unsuspecting rural members, who so often get imposed upon by patent-safe games, or patent-rights, claimed to be owned by some sharper. If he succeeds, we shall be much mistaken in the true sentiment that now exists in the profession. What seems strange to us is, that an intelligent profession, striving to elevate itself upon a level with other liberal professions, should permit in its deliberations, and recognize men as members of the profession, whose only business it is to watch the dentists, get evidence, and annoy them with bogus threats of lawsuits, for which they receive a salary, and are no more practising dentists than Commodore Foote or the man in the moon. We believe, from what we have seen in the past few months, that such things will be tolerated no longer, and the dentist who lends himself to any bogus patent-right monopoly, to be used as cat's-paws, will learn that no respect for him is due from the profession, and that all the fuglemen, drummers, transcendental philosophers, long grey-haired prophets, or any others he may call to his aid, cannot make the intelligent dentist believe that wrong is right.

REPRODUCTION OF BONE.

Dr. Cooper, the editor of the *San Francisco Medical Press*, after quoting a case in which the right side of the inferior maxillary bone was almost entirely restored after having been exsected, together with the articular condyle, remarks as follows upon this remarkable effort of nature:

The recorded cases in which reproduction of the bone has taken place are rapidly accumulating. It would appear that surgeons have lost nearly all their former fear of there being a want of reproductive power sufficient for the replacing of bone when lost. But practitioners were very slow in adopting this opinion until the evidence became overwhelming, though it would be difficult to tell why they were so slow in believing. Reasoning *a priori*, why should a physiologist hesitate to believe that lost bone would be readily reproduced?

It is a well-known law in physiology, that, with few exceptions, nature tends to reproduce the same substance as that lost, differing only slightly in texture, let the substance be lost where it may. Thus, when muscle is lost to any reasonable extent, it will be reproduced, not with the same muscular contractility, but it will always have a little more of tendon-like hardness about it. Tendon and ligament are both readily reproduced the same as the original, except that both are harder. Cartilage is sometimes reproduced in young children as cartilage of more than ordinary hardness, but in after years it is reproduced as bone. When bone itself is reproduced, it is still harder than the bone occupying its place before. It is, in fact, of almost ivory hardness in many instances. When it embraces the articular extremities, we often find the ligaments and synovial membranes attached directly to the bony structure, instead of the cartilaginous envelope found in the natural state. All the softer structures tend to bone in old age, and, even in early life, bone is often found where none existed, as the result of morbid action. And, occasionally, the same thing occurs where there is no diseased action, the formation of bone, in such cases, being the result of much use. *Example:* The sesamoid bones, formed in the tendons of the great toes, where there is no periosteum to aid in their formation.

Reasoning from these premises we early adopted the practice of taking out whole sections of the long bones instead of amputating, even in the most extensive diseases of this structure, especially when occurring in bones of the fore-arm and leg. Even in diseases of the femur and humerus, we have, in several instances, removed entire sections with the most happy results, a reproduction taking place with a very little shortening of the limb. But in all these cases the periosteum was preserved, and where this substance can be left we would not hesitate to remove the entire body of either of these bones, with the fullest confidence in the efficiency of nature in reproducing the requisite amount of bone. This often occurs when the periosteum is thickened to four or six times its natural condition, and the case terminates well, thus showing that an unhealthy periosteum is capable of producing healthy bone.

This we have noticed in many instances, and it has been verified positively, in one case, in which the abnormally thickened periosteum had reproduced healthy bone and had itself resumed a healthy condition, under the greatest possible disadvantages. It is the case of James Gilmore, with which many of our medical readers of this city are familiar. Five inches of the lower end of the femur, including the condyles, were removed. The periosteum was about half an inch in thickness, and had but slight attachments to the bone, even at the point of insertion of the abductor magnus muscle, so that it was readily detached from the bone, as far up as the disease continued.

The limb being kept extended the bone was rapidly reproduced, although, owing to a vitiated state of the constitution, the tibia and fibula became diseased, and, in twelve months after the operation we were compelled to amputate the limb, purulent matter having been burrowing among nearly all the muscles of the thigh, until hectic set in, threatening a fatal termination. Notwithstanding purulent matter was burrowing all around the newly-forming bone, it was fully developed, and as healthy as any bone, and of unusual solidity. The specimen is now in the Pacific Clinical Infirmary, where medical gentlemen are respectfully invited to call and see it. The reproduced lateral capsular and crucial ligaments are pretty well developed, and are adherent to the bony structures, in their usual places, though no part of the upper extremity of the tibia is more than a thin shell for several inches, the interior being completely disorganized.

From the favorable results of many similar cases in which an amputation had not to be performed, but where the periosteum was found thickened in the same manner, and the patient afterward recovered completely, we are convinced that the periosteum will, generally, become healthy after the exsection of the diseased bone. The change of action of the periosteum, produced by the operation, will often, and, perhaps, generally, be sufficient to restore it to a healthy condition.

These remarks have been lengthened to a greater extent than was at first intended, but the importance of the subject is our apology. The entire subject of the reproduction of bone is in its infancy. Surgeons are just beginning to awaken to its importance. Much good will result from it, and those in active practice should always publish the results of their experience upon the subject.

AMALGAM.

We have received from Dr. Berhard a specimen of his new Amalgam, which he claims to be superior to any yet prepared. We should think that its tendency to corrode is far less than any we have used, and if properly introduced in the cavity seems to be very durable. We would suggest to the Doctor that it would be much improved if it was so compounded as not to harden as soon as it now does. Many would not be able to use it as successfully in its present form as they could were it made to set a little slower.

PENNSYLVANIA COLLEGE OF DENTAL SURGEONS.

ANNOUNCEMENT.

The next session of the Pennsylvania College of Dental Surgery will commence on the first Monday of November, and continue until the first of March. Preliminary lectures will, however, be delivered each day during the latter half of the month of October, commencing on Monday, the 20th inst. The Dispensary and Laboratory of the College will also be open from that time, where ample opportunities will be afforded for the prosecution of the practical part of the profession under the daily supervision of the Demonstrators, who are gentlemen of known integrity and thorough capability. During October, as well as the entire session, a clinical lecture will be delivered, and operations performed by one of the Professors every Saturday afternoon.

The course is so arranged that fifteen lectures are delivered each week, on the various branches taught in the school. A synopsis of the manner in which each department is treated will be found under the head of the different chairs.

These lectures occupy about the average time of three hours each day. In addition, four hours are daily spent by the student in actual practice. With this object in view, the operating rooms are furnished with twenty chairs, so arranged as to command the best light, and all the appliances necessary for comfort and use. To these chairs the students are assigned in classes, and certain hours are fixed for each member of the class to operate.

Each student is required to provide his own instruments (except those for extracting), and to operate with them. He is expected to keep them in perfect order, and for that purpose is provided with a table in which they can be locked up when not in use. As the operations performed at the College are entirely gratuitous, a super-abundance of patients invariably present themselves.

In the mechanical department every process known in the profession, which has any value to the mechanical dentist, is fully taught; and receipts of valuable compounds are freely imparted. All the conveniences are at hand in the Laboratory for the preparation of metals, manufacture of teeth (single and in blocks), mounting, etc.; and the student is required to go through all the necessary manipulations connected with the insertion of artificial teeth—from taking the impression to the thorough construction of the denture, and proper adjustment of it in the mouth of the patient.

From this brief summary, it will be perceived that the course of instruction is not only theoretical but practical. And as the Professors and Demonstrators are all actively engaged in the practice of the profession, it is a fair guarantee that the wants of the Dental student are fully appreciated, and will be duly responded to by them.

It will be observed that a change has been made in the mechanical department, by the retirement of Prof. W. Calvert, who, having satisfactorily filled that chair for the last five years, resigns with the view of going to a distant city. Dr. E. Wildman, a member of the profession, whose numerous and valuable improvements in mechanical dentistry have gained for him an enviable reputation in that branch, has been appointed by the Board of Trustees to fill the vacancy.

In addition to the facilities afforded by the College for a thorough course of instruction in the theory and practice of Dentistry, the celebrated hospitals and clinics of the city constantly enable the student to witness various important surgical operations which are highly interesting and instructive. The medical and surgical clinics of the Blockley Hospital, in particular, one of the largest eleemosynary establishments in the world, are open to Medical and Dental students, free of charge. The staff of this institution is composed of some of the most eminent physicians and surgeons of Philadelphia.

ON THE TREATMENT OF SUSPENDED ANIMATION UNDER THE INFLUENCE OF CHLOROFORM.

By William Marcet, M. D., F. R. S., Assistant-Physician to the Westminster Hospital, etc., etc.

In the *Medical Times and Gazette* for July 20, I offered a few remarks on the phenomena attending the accumulation of vapors of chloroform in the blood, and insisted on the importance of watching the state of the respiration as well as that of the pulse during the exhibition of this anæsthetic agent. The number for October 28, of the same periodical, containing two new cases of death from chloroform, I may be perhaps allowed to return to this subject, my present object being to suggest a mode of treatment in these cases, which to my knowledge, has not yet been proposed; and considering the failure which has nearly constantly attended every attempt to restore animation suspended by an overdose or under the influence of chloroform, the following suggestions will be most probably of interest, and also, I trust, of practical utility.

It has frequently occurred to me that, in many instances, the final cause of death from chloroform was owing, not only to its anæsthetic properties, but also partly to spasm of the glottis. I do not mean, however, that the passage of the vapor of chloroform through the glottis and larynx has the power of causing an involuntary closure of the glottis; and I cannot agree with Dr. Black, of St. Bartholomew's Hospital, who states: "Any concentration of the vapor of chloroform which can be breathed, is safe; any condition of dilution which causes the patient to cough or hold his breath is dangerous, and if persevered in for half a minute, may be fatal." I believe a spasmodic closure of the glottis to take place occasionally from the action of the chloroform which has been absorbed into the blood, and that this obstacle to the admission of air into the lungs, taken in connection with the narcotic or anæsthetic effect of the chloroform circulating in the blood, has been in some, perhaps many cases, the actual cause of death. Should this view be correct, it will follow that if air be allowed to enter the lungs by means of tracheotomy, or by opening the glottis with a trachea-tube, or any other operation which will effect the same purpose, life will in such cases be saved.

It may be inferred that spasm of the glottis takes place occasionally under the influence of chloroform.

1st. Because several substances possessing anæsthetic properties are positively known, when present in the blood, to have given rise to closure of the glottis.

2d. Because the symptoms of death from chloroform are consistent, more or less, with death from sudden asphyxia.

3d. Because the post-mortem appearances after death from chloroform may be accounted for by assuming that death has taken place from asphyxia.

In the three following cases, spasmodic closure of the glottis resulted from the presence of alcohol, carbonic acid and sulphuretted hydrogen in the blood, the physiological properties of these three substances being allied, to a certain extent, to those of chloroform; and in two of the instances under our consideration, life was obviously saved by tracheotomy.

A very interesting case is reported in the volume of the Medico-Chirugical *Transactions* for 1837, entitled, "Case of Recovery from the Insensibility of Intoxication by the Performance of Tracheotomy. By George Sampson, Esq." The patient, aged thirty-one, was brought to Mr. Sampson's house in a state of complete insensibility after drinking freely of beer, and more than a pint of brandy; all voluntary motions had ceased for at least four hours. The stomach-pump being used, drew off between three and four pints of fluid, the greater part of which appeared to consist of brandy. Every means of exciting vomiting was afterward vainly applied; the man became more comatose, his countenance turgid, and breathing more and more difficult; the pulse grew fainter, and was at last scarcely perceptible. He was then removed to the Infirmary, and a consultation was held with the other medical attendants, who arrived in the course of half an hour; at that time every appearance indicated the rapid approach of death, and there was no ground to justify a reasonable hope of recovery. It occurred to Mr. Sampson when standing by the patient's bed-side, that the extreme difficulty of respiration was owing to the existence of "collapse of the glottis," and with this view of the case, he strongly urged that a trial should be given to the operation of tracheotomy. The operation was accordingly performed, without loss of time, by Mr. Andrews. The trachea was no sooner opened, than the distension of the veins about the head and neck subsided, the violent efforts of the respiratory muscles ceased, and in about half an hour, regular and easy respiration through the wound was freely established. At the same time, the pupils became slightly sensible to the stimulus of light, and the pulse returned to the wrist. He continued quiet during the night, but had no return of consciousness till the following morning. The case proceeded very satisfactorily, and the wound being healed in about three weeks, the patient was discharged, cured.

This case is particularly interesting, for the analogy between the physiological action of alcohol and chloroform has been quite satisfactorily demonstrated by Messrs. Lallemand, Perrin, and Duroy. Like alcohol, chloroform acts first on the brain, then on the spinal system, and finally on the sympathetic; the brain exerts a certain power of concentrating within its tissue both chloroform and alcohol; the period of excitement produced by chloroform, is not unlike that of alcoholic intoxication; and insensibility equally results when a sufficient dose of alcohol or chloroform has penetrated into the circulation.

If alcoholic poisoning is positively shown to have threatened life from asphyxia, owing to spasm of the glottis, I see no reason why death from chloroform should not be due occasionally to the same phenomenon.

The two other cases I have to report, have come under my own observation. One of them was an instance of secondary asphyxia, from spasm of the glottis, after immersion in the Serpentine during the skating season. The patient, a middle-aged man, had been entirely under water, but on being taken out, respiration returned, and continued comparatively free until placed in a warm bath, when he suddenly exhibited alarming signs of asphyxia, obviously from spasmodic closure of the glottis. A few minutes later the patient was removed to bed, when several similar attacks occurred, one of them still more severe than the first. He recovered in the course of some hours.

This is an instance of spasm of the glottis produced by an accumulation of carbonic acid in the circulation. The gas in question possesses anæsthetic properties, and is so far allied to chloroform.

The third case is one of equal interest, although the subject of the observation was a dog. About two years ago, when engaged in injecting an aqueous solution of sulphuretted hydrogen into the external jugular vein of a dog, I observed that the animal's respiration, instead of becoming somewhat deeper, as usually happens during this operation, began to fail, and shortly afterward ceased, without there being the slightest struggle or apparent symptom of asphyxia from the closure of the glottis. I immediately prepared to have recourse to artificial respiration by means of an instrument I have invented for that purpose. In order to insert a tube into the trachea, I incised this organ, when immediately, to my surprise, the animal commenced breathing through the opening. After a few minutes, free respiration and sensibility returned, and the animal recovered perfectly. It is obvious that, in the present instance, the respiration had been arrested by closure of the glottis, and the animal was dying from asphyxia; had not tracheotomy been performed, the dog would certainly have died with every symptom of syncope. This case, which I report from memory, was witnessed by many of the pupils of the Westminster Hospital. It shows two interesting facts:

1st. That the presence of an excessive quantity of sulphuretted hydrogen in the blood, may cause death from spasm of the glottis; and, 2d, that on those occasions death takes place without the struggles or convulsions so peculiar to impeded respiration. Consequently, in cases of death from chloroform, the absence of convulsions is no proof that there exists no mechanical obstacle to the free admission of air into the lungs.

The symptoms of death by chloroform are consistent with those of asphyxia. Dr. Snow's book contains a very interesting case of death from chloroform, with symptoms of asphyxia, which was communicated by Dr. Solly to the *Medical Gazette.* This case (No. 12), bears directly on the subject of the present communication. The patient, a porter, aged forty-eight, and apparently in perfect general health, was submitted to chloroform for the removal of a toe-nail. The anæsthetic vapors were administered by means of an inhaler; after the operation had been performed, and being still insensible, the patient's face became dark, his pulse small, quick, but regular; respiration laborious; his neckerchief was removed and chest exposed to fresh air from a window near to the bed, cold water was dashed on his face, the chest rubbed, and ammonia applied to the nose. After struggling for about a minute, he became still, the skin cold, pulse scarcely perceptible, and soon ceased to be felt at the wrist. Immediately on the appearance of these symptoms artificial respiration was commenced by depressing the ribs with the hands and allowing them to rise again, until the proper apparatus was brought, when respiration was kept up by means of the trachea-tube and bellows, and oxygen gas introduced into the lungs by the same means. Galvanism was also applied, but to no purpose.

Dr. Snow considers there is some obscurity about the above narrative, which I have given as nearly as possible in the same words as those used in the report; in his opinion the symptoms exhibited would be inconsistent with death from chloroform. It appears to me, however, that this is clearly a case of asphyxia from spasm of the glottis under the influence of chloroform, and I cannot help believing that had tracheotomy been performed at the time when artificial respiration was commenced, the patient would have been saved. If most cases of death from chloroform are not attended with evident signs of asphyxia, still this is no argument in favor of the absence of spasm of the glottis, for it must be remembered that poisoning by chloroform is a complex phenomenon which results from excessive anæsthesia producing a tendency to paralysis of the muscles, and an action on the heart predisposing to death by cardiac syncope; any spasmodic closure of the glottis occurring under these circumstances would, it may be anticipated, cause sudden death without the recurrence of convulsions, or struggles for breath.

The post-mortem appearance in cases of death from chloroform do not preclude the idea of death from asphyxia; indeed in cardiac syncope, which is, according to Dr. Snow, the fatal termination of poisoning by chloroform, "If the blood have not been displaced by artificial respiration or other causes, the right cavities of the heart and the adjoining great veins will be found filled with blood, and the lungs will in many cases be more or less congested. The appearances, in short, will be very much the same as in asphyxia by privation of air, which ends in a kind of cardiac syncope." Nothing can be more in favor of the view I am advocating. It must be well understood that I do not consider every case of fatal poisoning by chloroform as owing to spasm of the glottis, and there is every reason to believe that in some instances death takes place from paralysis of the muscles of respiration, in others from cardiac syncope, or from a simultaneous occurrence of both these effects.

If it be admitted that death from chloroform be occasionally owing to spasm of the glottis, then the importance of performing tracheotomy, in these cases, and adopting some means of allowing air to enter freely through the wound, will be readily understood. It must be remembered that the cases on record of recovery from suspended animation owing to an overdose of chloroform, are very few, and as a rule, it may be considered that, after the respiration has ceased, and the pulse become hardly perceptible at the wrist, death is inevitable. Under these circumstances, any means apparently available should be adopted. The operation of tracheotomy ought to be performed as soon as possible after the respiration has stopped, and the patient assumed that livid countenance known in these cases to precede death; the loss of every second diminishes the chance of saving life. Artificial respiration, if possible, must however, not be neglected, and should be carried on before, during, and, if necessary, after the operation of tracheotomy has been performed. Artificial respiration is of great importance in connection with death from chloroform, and I am at present busily engaged inquiring into this subject.—*Medical Times and Gazette.*

ROOT OF A CANINE TOOTH LODGED IN THE THICKNESS OF THE LOWER LIP, SIMULATING A CANCEROUS TUMOR.—M. Landyck, of Dunkirk, has published this case, referring to a lady forty years of age. She had always suffered with her teeth, and had but a few incisors left, the rest of the jaws presenting roots more or less firmly wedged, and alveoli more or less decayed. Toward the end of the year 1854, she felt a small tumor forming in the lower lip on the left side, which tumor soon filled the space below the internal aspect of the lip and gum. Pain was subsequently experienced, and a few months afterward the patient could hardly eat. She sent for M. Landyck, who discovered a large tumor situated as above described, and ulcerating. Ablation was not proposed, as the lady was very nervous, and cauterization was resorted to. In the meanwhile parturition took place quite normally, and, while using the caustic some time afterward, M. Landyck felt a hard substance in the tumor; by then making a crucial incision, he discovered a long root of the canine tooth, covered with a thick layer of calcareous matter. It was placed horizontally, the apex turned toward the lip, and its upper part adhering to the bone. This being removed, the tumor disappeared and the patient was freed from all uneasiness.—*Lancet.*

MOLAR TOOTH LODGED IN THE TONGUE.—A man about twenty years of age entered the hospital about ten days after the battle of Williamsburgh, having received a wound from a bullet which struck the right side of the lower jaw, and passed out through the upper lip. The jaw was shattered, and when he entered the hospital, there were purulent deposits connecting with the neck externally and the mouth internally. The patient was etherized, and the wound being explored, bits of bone were found everywhere buried in the substance of the cheek and the surrounding soft parts. These were extracted, and the wound healed rapidly. Some weeks afterward, he presented himself at the hospital with a swelling in the tongue, the edge of which had been wounded by the bullet, and which until lately, he had been unable to protrude. On examination, a hard body was found imbedded in the substance of the organ, which, on being cut upon, proved to be a molar tooth which had been knocked out of the jaw and buried in the tongue.—*Boston Med. and Surg. Journal.*

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Silver Precipitate, per oz.,	2 00
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Berhards, per oz.,	1 50
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Melting Ladles, different sizes,	from 0 25 to	0 40
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" " Deffenbach's, "		1 00
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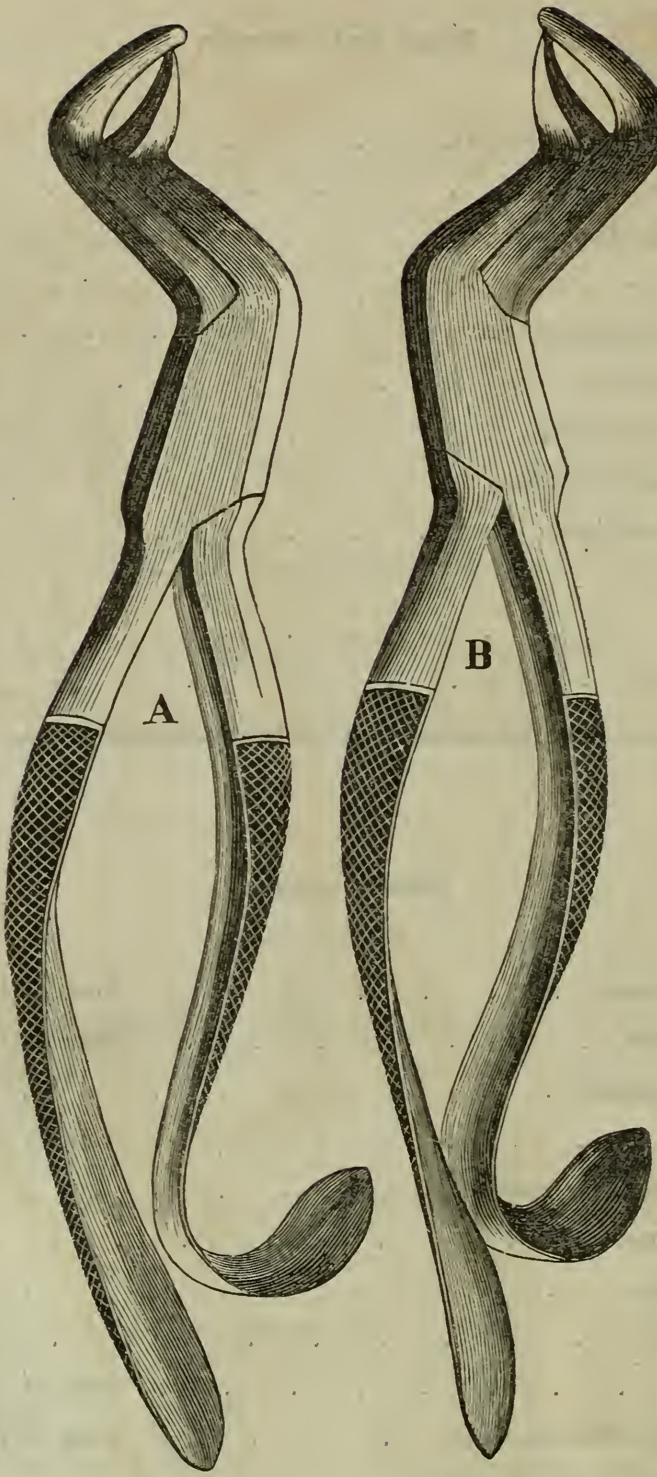

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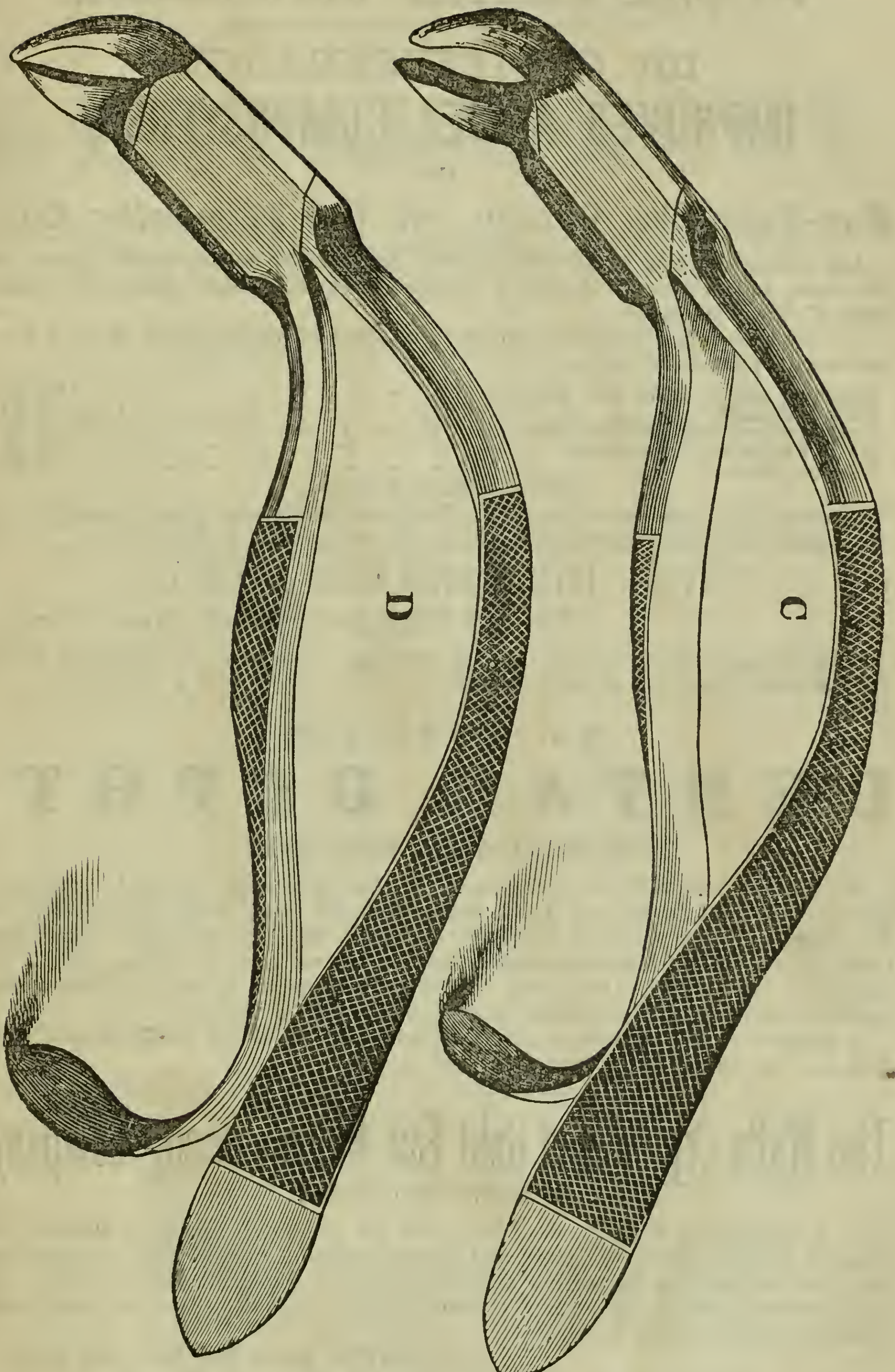

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"	" " 2 pins,	0 8
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"	" with holes,	0 15
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"	do do with holes,	0 16
Porter's	Gum-teeth for plate-work,	0 15
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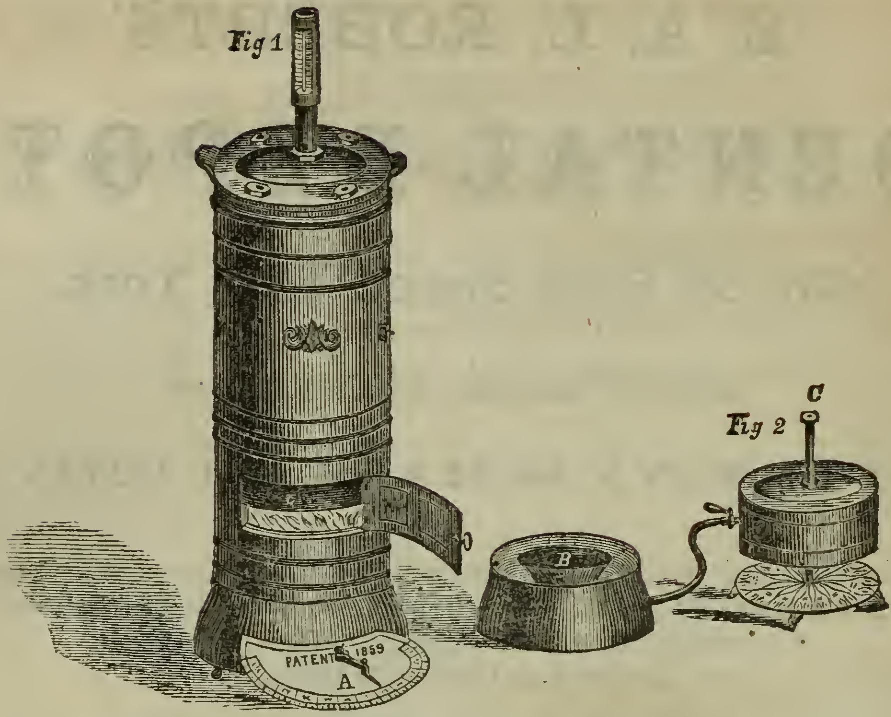
"	Continuous gum, 2 pins,	0 8
"	Roberts' " 1 pin,	0 8
"	Gum for vulcanizing long pins,	0 16
	Block " "	0 20



E. A. L. ROBERTS' IRON VULCANIZER.

Figure 1 is the gas-machine, complete, comprising the steam-chamber, with its thermometer and boiler at the top; the stove which confines the heat around the boiler and steam-chamber, in the centre; and the gas-burner, with its regulating index, as at the bottom.

Figure 2 is an alcoholic burner, to be used in place of the gas-burner A, in figure 1, when gas cannot be obtained. Gas, however, is the most desirable of all sources of heat, for this apparatus.

In Figure 2, C is a thumb-screw, by which the lamp can be elevated or depressed, governing the flow of alcohol into the burner B.

Although other vulcanizing machines have been offered to the profession within the last few years, we hazard nothing in claiming a marked pre-eminence for that which is represented in the above engraving. It combines the advantages of economy, compactness and convenience, in an eminent degree. It may stand on the work-bench in the operator's laboratory, without producing uncomfortable heat, at any season of the year.

It can be heated by gas, when that article can be obtained conveniently, or by alcohol when gas is not available; and, in either case, the expense of fuel is quite inconsiderable. It can be so adjusted as to remain at any required degree of heat, for any length of time.

This kind of vulcanizer is constructed of two sizes. The largest machine is nineteen inches in height, including the base; its diameter is seven and a half inches; its weight is thirty-one pounds; and it vulcanizes four pieces at a time.

The smaller size is fifteen inches in height, seven and a half in diameter, weighs twenty-seven pounds, and vulcanizes three pieces at a time.

An itinerant dentist can carry with him this smaller machine with less inconvenience than the various apparatus for swaging metallic plates.

The above cut represents the first gas and alcohol machines offered to the profession that can be used with either chloride of calcium, beeswax, or any material that does not evaporate or decompose when heated to a temperature of 310 degrees.

The profession will take notice that all gas and alcohol vulcanizers now in the market are direct infringements on each of my *patents* dated 1859.

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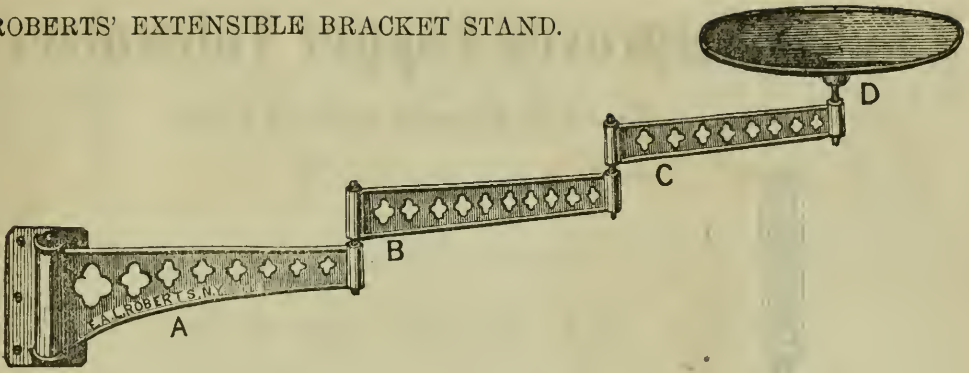

This very convenient stand is made of three segments of ornamented iron, A, B, C, (see engraving). These may be instantly separated from each other, and when connected, by being slipped into their respective sockets, may be folded edge-wise upon each other, and laid closely to the wall or partition to which the bracketed end may be fastened. The desk or top D, is equally and firmly adjustable to the end of either of the segments. It will be seen from the engraving that when affixed by means of the bracket to any wall or upright, the bracket stand may be turned at pleasure, and accommodated to any height, or position, or posture the dentist may assume during his operations. This is regarded as an especially happy contrivance as a tabular support for all the dentist may need during his operations. Price $5.

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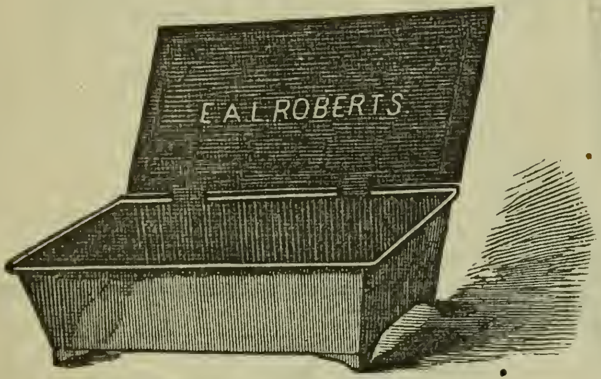
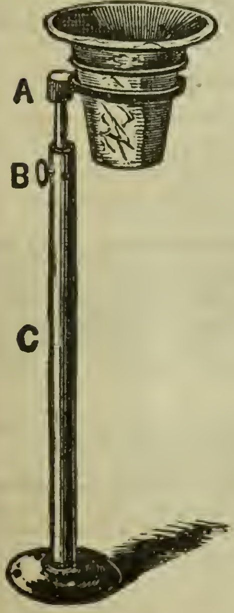

E.A.L.ROBERTS.

The accompanying engraving is a figure of a casting-box recently designed by us. It is superior in being of solid metal (painted and bronzed), and so provided with a flanged cover that it obviates all the difficulty, much experienced, of the drying of the moulding sand. It can neither be warped, bent, nor charred—qualities especially desirable in this article. Weight about 53 pounds. Length 30 inches. Width 16½ inches. Depth 8½ inches. Price $5.



ROBERTS' ADJUSTABLE SPITTOON.

A glance at the engraving will suffice to exhibit the advantages of this article. C is the rod pedestal, which may be temporarily or permanently affixed to any level desired, by its disked extremity. By means of B, it may be lowered or raised at pleasure. The top and body of the spittoon are separate, and may be lifted away from the ring represented by A.

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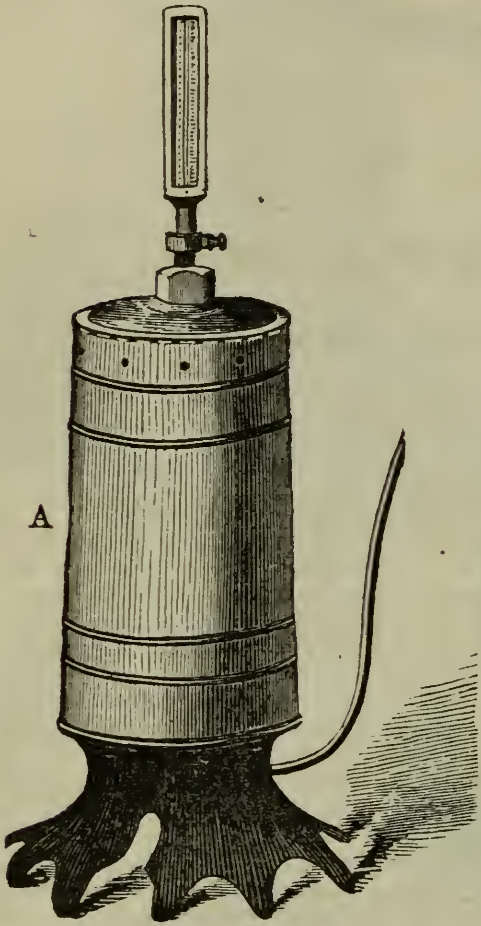
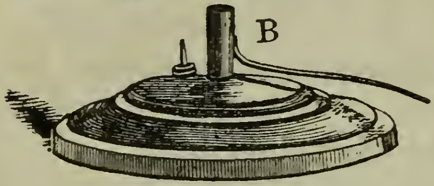
Fully represented in Figure A with gas burner


A


B

PRICES.

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Flask, each	.50
Alcohol burner, extra	1.00
Thermometer, with safety valve, extra	1.54
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These machines are the most compact, light, and the strongest of any now in market. They are made entirely of copper and brass. The copper chamber is spun from one solid piece of metal dispensing with brazing, making it smooth and of equal thickness. They are constructed of three sizes. No. 3, the largest size, is seven and a half inches high, four inches in diameter, weighs three pounds, and vulcanizes three pieces at a time. No. 2, second size, is six inches high, four inches in diameter, weighs two and a half pounds, and vulcanizes two pieces at a time. No. 1, small size, is four and a half inches high, four inches in diameter, weighs two pounds, and vulcanizes one piece at a time.

Figure B represents the alcohol burner with its regulator.

Figure C represents the machine placed in ring, the ring being screwed fast to the bench which holds the chamber, while the wrench at the top is used to screw on and off the cover.

The three clamps with flasks (1, 2 and 3) represent one for each size machine.

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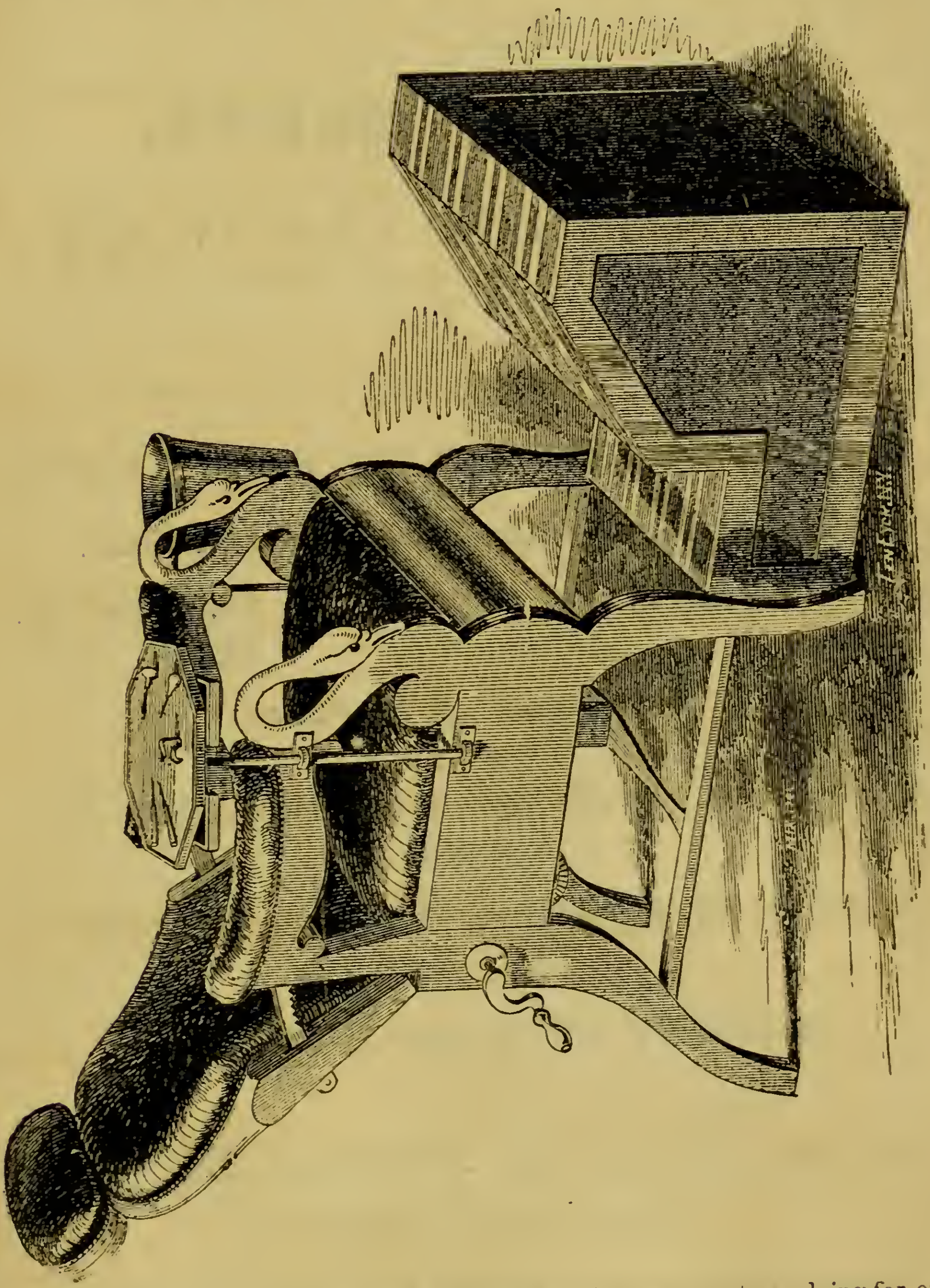

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MARCH, 1863.

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TO OUR READERS.

We have to apologize for the tardy appearance of the New York Dental Journal for March. The unavoidable absence of the senior editor at the South, and his desire to present to the profession the results of his experiences in that direction, rendered the delay unavoidable; but we trust the contents of the Journal may be found sufficiently interesting to atone for its lateness in appearing.

Our next number will be issued on the 1st of September, and will contain a full report of the eighth annual meeting of the American Dental Convention, which will take place at Saratoga Springs, on the first Tuesday in August; the subjects for discussion will be found announced in another part of the present issue. We earnestly bespeak the attendance of all dentists who desire the advancement of the profession, assuring them that intellectually this meeting will be, in our opinion, quite up to all former standards; while, as regards hospitality, we have only to remind our friends that Mr. A. Jones will be found at the Clarendon, and nothing more remains to be said.

TWENTY-FIVE DAYS IN THE SANITARY COMMISSION.

A visit to Port Royal, as an agent of the "Sanitary Commission," with a trip to Charleston on board the "Schooner Recruit," on the late bombarding expedition sent out by Government, made by the publisher and editor of the New-York Dental Journal, gave food for much thought; and an account of what we heard, saw, and did during that period may not be uninteresting to our readers.

On the 20th of March we sailed from New-York in the steamer Arago, bound for Port Royal, where we arrived, after a pleasant voyage, on the 24th. The headquarters of the commission being located at Beaufort, we obtained from the provost marshal, at Hilton Head, a pass to that place; and, taking steamboat, we arrived a few hours after, and reported ourselves to Dr. M. M. Marsh, the chief agent for that department.

Our principal object in this visit to the South was to assist the Sanitary Commission in the expedition to Charleston, and we had anticipated that our time would be fully occupied in aiding in the preparations being made by the commission for their share in this undertaking. We were, however, agreeably surprised to find that, through the judicious foresight of Dr. Marsh, a schooner was already fitted up with the necessary stores, and only waiting sailing orders, so that our time was much less occupied than we had expected, which gave us ample opportunity to discover what was being accomplished in the department of the South.

We made it our first business to go about among the regiments stationed at Beaufort, with a view to learn for ourselves, from personal observation, their precise condition, sanitary and otherwise.

We found the different regiments located with due regard to health and comfort, and exhibiting every evidence of good condition. There were comparatively few cases of sickness in the hospitals, and the sanitary condition of the troops in the department may be considered in the highest degree gratifying to the friends of the army.

On the 26th we took steamboat for St. Helena Island, about ten miles from Beaufort, for the purpose of witnessing a review of the troops commanded by General Hunter.

The troops were all veterans. Many were from General Foster's corps, while others had served under General Lander in Western Virginia. Their evolutions exhibited the results of experience, and in drill and discipline they would compare favorably with any in the army.

The following day we took the opportunity to visit the Negro Regiments encamped about four miles from the town of Beaufort. We felt special interest in this examination, as our curiosity had been raised by the many assertions made for and against the negro as a soldier.

Our observation in this matter satisfied us that the opinion universally expressed, by those who have witnessed the organization of the Negro Regiments from their inception, is just and correct in every particular. It is admitted, even by those who opposed the idea from the beginning, that the negroes have not only shown themselves docile, willing to work, and completely subordinate to their officers, but that they are intelligent, quick and willing to learn, and highly susceptible of discipline. Those who have seen them fight, speak in the highest terms of their courage and determination. They are neat and cleanly in their habits, and in that respect may be favorably compared to the white soldier; so that whatever objections may be raised against using them in our armies, none can be founded on their own incompetency or short-coming. An old negro exhorter, who went about among the regiments, had excited them to the highest pitch by his language, so well adapted to those whom he addressed; and with him to infuse the spirit into them, they would go, like the followers of Peter the Hermit, to where even death might stare them in the face. Indeed, he told them that death would be for them the shortest road to Heaven, the sure end for all who fought well; the only difference being, that the "*fust one dat gets killed is de fust to get to Heaben.*"

That there exists a prejudice among many of the officers and soldiers, even in this department, against the employment of negroes in the army, is undeniable; we endeavored to ascertain what the principal objection to it was; having something of the Yankee in our composition, we did not hesitate to ask questions; perhaps at times we may have unconsciously annoyed some who disliked being questioned; nevertheless, we invariably received civil and intelligent answers from civilians, soldiers, and officers, upon all subjects in which we felt interested. One of the greatest objections entertained against using blacks as soldiers was, that it seemed to place them upon an equality with the whites.

In connection with this subject we conversed with several, and among others with an intelligent New-Englander, who was one among those opposed to their being put to such use. We asked him if there were not free negroes in the town from which he came, and if so, whether he considered them on an equality with himself on account of being free. "Not by any means," was his prompt reply. "Are you obliged to mess, drill, or encamp with the black soldiers?" said we. "Oh! no, they are located four miles away," he replied; "and I have not been able even to visit their encampment, but would like a furlough long enough to enable me to pay them my respects."

By this short conversation, and other evidence received, it became evident to us that the only sound objection to negro soldiers arose from a fear of being forced too closely into contact with them. As the negro soldier is, however, a fixed fact in the department of the South, and such a condition of things is found not to exist, the objection is fast dying away.

But we will leave the negro and return to the white soldiers, among whom we found enough of interest to fill the *Journal*, if we were so disposed. To exhibit the adaptability of the native-born Yankee to any condition of things in which he may be placed, we will give an instance which will also illustrate the peculiarities of military life.

One morning while walking through the camp, we observed a small, shrewd-looking man engaged in the occupation of ablution, not upon himself, but on a shirt, which he was vigorously and dexterously scrubbing on a home-made wash-board. Stopping for a moment to look at the unaccustomed sight, the individual suspended his operations and accosted us, in unmistakable Connecticut. "Wall, stranger, haow air yer?" We replied that we were enjoying our usual robust condition of health, and proceeded to remark upon his occupation as slightly unmasculine. "Wall, I sartainly never thought I'd take ter this kinder thing, tell I got in the armey, but I find I kin jess do any thing I set my hand ter," said he, with a philosophizing look. And after-experience proved the correctness of his assertion. Soon quite a number of men, noticing a civilian standing near, came up, and we were quickly engaged in a conversation certainly most interesting to us. After some time we missed our friend of the tub, but thought no more of it, and continued our stroll through the camp. Presently we came to a company kitchen—a little shed, built and roofed with boards purloined from some tempting negro domicile; in front was an oven, neatly built of bricks, also confiscated, while the whole place showed evidence of being in charge of an adept; what was our surprise, on turning to look at the cook, on finding him our late laundry acquaintance, now, however, armed with a frying-pan, which he apparently wielded with the same skill as he did the wash-board.

"Reversing the old proverb, of 'out of the frying-pan into the fire,'" said we, "you have got out of the water into the frying-pan." "Jest as I told yer," said he, "we never know what we kin do till we're tried." Our friend having invited us to examine his kitchen, we found it as neat as could be wished. "But where did you get your oven?" asked we, in our innocence of heart. "Made it," said he; "we make every thing down here, except money and war, and we leave them to the fellers up ter Washington." We had nothing to say, so we said it and went on our way rejoicing.

While on the subject of cookery, we may as well note down our impression as to the mode of practising that important art common to most of the regiments. There are doubtless many regiments whose food is properly prepared, and served up with that attention to detail as important to health, as it is to comfort; but the great majority have their food improperly cooked, from simple ignorance of the first principles of the art. Every French soldier is a cook, and Soyer's lessons have done nearly as much to make good soldiers as the best drill-master in the French army. A man is better tempered, more inclined to work, and will fight better with a good meal, properly cooked, than without it. We would therefore respectfully suggest to the Sanitary

Commission, that if a small pamphlet of instructions for cooking were printed and circulated among the soldiers, it would be of great assistance to the officer, the surgeon and the soldier. We mean directions for cooking plainly, but properly, only such articles of food as the soldier will be likely to be called upon to cook.

It is at once obvious that such instruction must be necessary, when we reflect that out of the million of men called into the field, many thousands will be required to officiate as cooks for their companies, who cannot cook a potato or boil an egg. The sameness in the mode of cooking which prevails in the army is, in the highest degree, detrimental to the health as well as the comfort of the soldier.

This point is understood in some of the regiments, and we were informed of companies that detailed men as cooks, who had, by self-instruction, become so skilled in their new rôle, that they were enabled to keep up a large company fund by the savings made in the rations by judicious cookery. Our suggestion is made, not from the fact that there are no books upon cookery in the army, as nearly every hospital steward is furnished with one; but those are not suitable for the soldier, and, as he seldom sees them, they can be of but little value to him. What he needs is a small pamphlet, which he can fold up and carry in his vest-pocket without its being cumbersome. Then, if he should be lucky enough to be encamped where he can obtain fresh meat and vegetables, which he may have had no experience in cooking, he can refer to his pamphlet cook-book, and obtain all the information necessary. Officers may be able to detect when food is improperly cooked, without knowing how to direct the soldier in order to remedy the defect; at such times a pamphlet, made up as we have suggested, would be found very useful *even* to *officers*.

But we will leave the subject of cookery, which has, however, given us an opportunity of saying something we felt of importance, and return to the subject more immediately under consideration.

Amidst the monotony of drill, and the sameness always forming a part of military life, the soldiers are driven to all sorts of expedients for amusement.

Our attention having been called to the printed programme of a concert, to be given on the evening of the 27th of March, by a glee-club formed of the privates of a New England regiment, we determined to be present. The concert took place at one of the churches in Beaufort, and at the appointed hour we formed an insignificant portion of the crowd assembled to witness the performances.

The music was well selected and sung with taste and spirit, and the affair was very creditable to all concerned. But what chiefly interested us was an incident which may be taken in connection with our remarks on the adaptability of the universal Yankee to all occasions and necessities. What was our surprise when, on the appearance of the principal solo singer, he turned out to be no other than our inevitable friend of the wash-board and frying-pan, and proceeded to regale the audience with strains quite as melodious as many of our best New York tenors. On the following Sunday, the 29th, we had a specimen of a genuine southern rain-storm. From dubious the weather became dismal, and when the bells rang for church we went, thankful to escape to a scene likely to be both novel and interesting. Rev. Mr. Harris, post chaplain, who, by the way, appears to be doing much good in the department, was the officiating clergyman. Owing to the sparseness of the assemblage, he concluded to dispense with the usual services, and, as he termed it, to occupy the time with singing and prayer. We were never so struck with the evidences of our descent from the Puritans. Cromwell's roundheads could not have prayed with greater unction, and we question whether they could fight with more determination than these same praying Yankees. It was really surprising to witness under such circumstances, apparently antagonistic to all religious feeling in an invading army, occupying an enemy's country, so much genuine fervor and earnestness. To see these weather-beaten and war-worn veterans kneeling in prayer with so much unanimity of sentiment, without even the softening presence of woman to lead their thoughts in this direction, was touching in the extreme. The prayers evidently came from the hearts of the utterers, and bore witness to the good teaching of their homes in the little New England villages whence many of them came.

Although not in the polished language of learned theologians, their simple prayers, offered up for their country, its President, their friends at home, and their own souls, seemed certainly calculated to reach even the throne of the Most High.

Prayer after prayer was thus listened to, and we were anticipating the close of the service, when our attention was drawn toward one who, kneeling in a distant corner, raised his voice in homely but forcible appeal, more interesting than any preceding. Something in the tones seemed familiar, and we were really not surprised to discover that this, really the most powerful exhortation to which we had listened, proceeded from none other than our ubiquitous acquaintance of the kitchen and the concert. We saw no more of him; but we are well assured that under whatever circumstances he may be placed during this contest, and whatever difficulties he may be forced to contend against, he, at least, will not be found wanting.

We left this unexpected scene with impressions that time can never obliterate, and with feelings of heartfelt respect for the composition of men who could thus throw off the panoply of war, and clothe themselves in the pure and unstained garments of righteousness.

On the Tuesday following, we availed ourselves of an opportunity to visit some of the schools which have been instituted by various benevolent societies in the North, for the education of negro children. Judging by what we witnessed, we should say that these schools are being productive of great benefit in the department. The children exhibit a remarkable degree of intelligence and aptitude for learning, and effectually refute the assertions commonly made concerning the natural stupidity of the negro. Their musical ability is really surprising, and the originality of the negro melodies may be here observed in its perfection. Through the kindness of Miss Kellogg, who superintends the school exercises, we were permitted to see the children in their strange religious ceremonials, called "Shouts," and were greatly pleased with their novelty. So anxious are the children on the various plantations to attend school, that they will tramp for miles, through all sorts of weather, in the early morning, fearing nothing so much as being late.

Having received orders to be in readiness to embark for the expedition on Thursday, April 2d, we were obliged reluctantly to leave without seeing as much of this institution as we would have liked; but what we did see gave us the most favorable impression of the importance of these schools as a civilizing agent.

If space were permitted us, we should take pleasure in giving a detailed account of every thing which particularly interested us in the department of the South; but in giving further our opinion, we can only say that under the able superintendence of General Hunter, this department seems to progress with as much rapidity and excellence as any in the army. The judicious selection of the very best men for aids and advisers, and the promptness with which both Generals Hunter and Saxton respond to any call made upon them, either military or charitable, calculated to promote the welfare and happiness of soldier or citizen, show that although high in command, they are not unmindful of the condition of those in inferior positions. Did time and space allow of it, we would like nothing better than to describe to the reader the admirable manner in which the hospitals are conducted by their superintendents, and the manifold trying duties performed by Mrs. General Lander and her corps of nurses as assistants. The women who have gone to this department, either as teachers, nurses, wives of officers, sisters of soldiers, are doing for the morality of the army that which nothing but women can do. To illustrate this, we need only to mention one instance that came under our notice. One gentleman announced in our presence that before his wife joined him, his rum-bill at the hotel was from seventy-five to one hundred dollars per month, but since her arrival it was not six cents.

We would like also to exhibit the energy infused into the management of the newspaper enterprise; the cultivation of cotton by indefatigable Yankees, who have purchased plantations from the government, and are conducting this novel employment as if they had never done any thing else all their lives. Then there are the erection of fortifications, the building of wharves, the ginning of cotton, the express company, stores, hotels, steamboats, and vessels of every kind in the bay, and all the indications of a flourishing, industrious port; so that one would suppose it to be a free city of New-England, rather than a military department on the "sacred soil" of South Carolina. And we venture to say, such enterprise was never seen in this portion of Dixie even in the most prosperous times of the Union. But however much we might desire to linger among these scenes, so full of interest for the Northern man, we were at length forced to leave them; the long-looked for word of command had at length passed along the lines, "Forward to Charleston!" and humbly imitating the first quality of a good soldier, obedience—we took our allotted position in the ranks. But before leaving the subject of Beaufort, we would like to take the reader by the hand, and give him an opportunity of looking in at the head-quarters of the United States Sanitary Commission.

Imagine, then, an unassuming building, situated upon the main street of Beaufort, in a pleasant locality, and beside the famous "Rhett House," where was laid and hatched the egg of secession. Over the door, a modest sign denotes the occupancy of the commissioner; and passing in, we will glance through the house, that we may obtain some idea of how they manage matters in this, by no means the most prominent department. The rooms are crowded with boxes, bales, barrels, packages of all sizes and kinds, labeled in various ways, and containing every imaginable human preparation for the benefit of the outer or inner man, whether in a condition of health or of disease, of life or of death. Here in this corner are barrels, marked "old linen," "dried apples," "currants," "cherries," and "plums," there are boxes, labeled "bed-quilts," "pillow-cases," "pillows," "cushions," "sheets," "socks," "drawers," "shirts," "dressing-gowns," "slippers," "handkerchiefs," "towels," "napkins," etc., etc. Yonder you will find packages and boxes containing "lint," "sponge," "basins," "tin-cups," "candles," "crackers," "tea," "coffee," "condensed milk," "farina," "beef-stock," "soap," "brandy," "whiskey," "wine," "porter," "quinine," "chloroform," "morphine," "tourniquets," "preserved peaches, tomatoes, and gooseberries;" and in fact, by taking the catalogue of the contents of a grocer's establishment and a drug-store combined, you could not go far wrong in giving them credit for possessing most of the articles you meet with, and sufficient to set up a ready-made clothing establishment into the bargain. This list will give an idea of the variety of supplies necessary at every depot of the commission. In one room will be seen different persons engaged in packing up various articles to fill requisitions made by surgeons of hospitals or of regiments in the field. Others again are making out the necessary regimental, inspection, and hospital reports, to be forwarded to the department at Washington. These reports, by the way, are so systematically arranged, that any one in search of the whereabouts of a sick or wounded soldier friend may, by application at head-quarters in Washington, learn whether he is sick, and if so, of what disease; if wounded, how much; in what hospital he may be; if convalescent, discharged, or dead; and if the latter, where buried. This system extends its ramifications throughout the whole army. And in case of a battle, the agent of the commission will be found close at hand with packages ready for distribution to surgeons or hospital, or ready to be conveyed upon the battlefield.

The following list will give an idea of how all the articles are given out:

FIELD HOSPITAL.

Case A.—Lint, bandages, sponge, towels, handkerchiefs, brandy, basins, cushions.
" B.—Crackers, tea, milk, tin cups, candles, towels.
" C.—Old linen, basins, sponge, whiskey, socks, towels, tin cup.
" D.—Beef-stock, cushions, towels, dried fruit, tin cup.
" E.—Farina, tea, milk, socks, towels, soap.
" F.—Cotton drawers and shirts, basin, towels, soap.
" G.—Crackers.

Special Cases for Battlefield.—Sponge, chloroform, candles, morphine, tourniquets, tin cup, assorted soap, brandy, towels, handkerchiefs, bandages, adhesive plaster, corkscrew.

Sacks.—Bed-sacks, blankets, pillows, cushions, flannel shirts, flannel drawers, socks, towels, beef-stock, pillows, cotton shirts, cushions.

By Quantity.—Bed-sacks, blankets, pillows, cushions, shirts and drawers, socks, lint, bandages, tea, beef-stock, crackers, Stim's brandy and whiskey, dried fruit, milk, farina and lanterns.

Ready to be put upon horse or mule back.

Panniers—No. 1. Pillows, cushions, blankets.
" " 2. Milk, towels, &c.
" " 3. Blankets.
" " 4. Woolen shirts, colored shirts, bandages.

Panniers—No. 5. Beef-stock, keg, pillows.
" " 6. Bed-sacks.
" " 7. Cotton drawers, socks, bed-sacks.

But the general idea of the Sanitary Commission is so well understood by the public, and has been so frequently explained by the public press, that we feel as though our humble effort would be almost without usefulness or interest to our readers, and it is only in presenting these minor details that we can hope to be at all novel or original in our description. We felt so much pride for our country, and especially for our countrywomen, from whom have come so much of the valuable supplies of the commission ; we could so well appreciate that fostering care that oversees the soldier, wounded, sick or dying in the lonely hospital, that we could not resist the opportunity of showing in some slight way the end of it all.

The members of the corps, consisting of Dr. Marsh, Mr. Spalding, and ourselves, having been joined by Dr. Page from Newbern, N. C., whose experience in the practical working of these expeditions, and his personal observations made upon battlefields, were invaluable, we embarked on the 2d of April upon the schooner "Recruit," which had been detailed to accompany the fleet in behalf of the "commission." The expedition not being in readiness for their final departure, we were detained in the harbor Thursday, Friday, and Saturday. The evening of the latter presented evident signs of our approaching movement. We shall never forget the scene presented to our view on that evening. The air was calm and beautiful; above, the blue sky, freckled with a myriad of stars, that seemed brighter in this more southern climate than in the north ; the brilliant moon in their midst, almost paling their brightness with her own wondrous effulgence; and beneath, the blue waters rippling with soft monotonous music against the sides of the vessels, combined to make a framework wherein the strange picture before us seemed fitly enshrined. All around, as far as the eye could reach, lay ships of all sizes, from our own brisk little schooner to the sluggish black transport, or the mysterious-looking monitors, with the quaint tub-like turrets, each standing out against the brilliant sky like some gloomy tower of a subterranean castle.

Meanwhile the lights on the vessels seemed to mingle with the stars themselves, flickering and twinkling, as it were, in a vain effort to institute a comparison between them. Every now and then signal lights would be seen to move mysteriously, as though meteors had been chained and forced to telegraph man's wishes.

Little tug-boats panted and puffed wildly, as they darted in and out among the fleet every now and then, screaming discordantly as if in defiance. Bands of music played martial airs, or from some distant vessel could be heard voices well attuned, singing "Home, Sweet Home," as it never sounded elsewhere. Thousands of brave men lay down to rest that night on the blue water, not knowing if a few more nights might not find them with their anchors hauled in, and their moorings to this world cut loose forever; that such was not the case, was, after all, only a postponement of what must come eventually. But among all the thousands who were present, we are sure few who live will forget the wonderful beauty of the surroundings of that Saturday night. On the following morning, at six o'clock, the last of the expedition weighed anchor and stood out to sea.

We arrived off Stono Inlet about two o'clock, where we were delayed about four hours before the tide was sufficiently high to carry us over the bar. All along the coast to far above Charleston harbor could be seen gunboats, monitors, transports, and schooners, all laden with troops or munitions of war; the whole coast seemed to teem with animation. During Monday and Tuesday great activity was exhibited in the fleet; troops were landed on Coles' Island and Folly Island, preparatory to the attack on Charleston, which commenced on Tuesday afternoon, shortly before three o'clock. Although we were eight miles from the scene of action, anchored at the junction of the Folly and Stono rivers, yet the tremendous explosions of artillery could be distinctly heard, and their sharp reverberation made the earth far up and down the coast vibrate, and the vessels in the harbor tremble, while the smoke could be seen plainly as it floated up in the air. The progress and final result of the bombardment have been already fully laid before our readers in the daily press, and it will be unnecessary for us to describe further. We lay at anchor until Saturday, anticipating a renewal of the fight; but on that day, learning that the fleet had been ordered back to Hilton Head, we took advantage of the arrival of the Arago and sailed for New York, where we arrived on the 14th inst., after having been detained several hours off Charleston harbor, and also at Fortress Monroe.

On our return trip our attention was attracted to the fact, that quite a number of invalid, disabled, and convalescent soldiers, who had been discharged or were on furlough, were on board the steamer; and hearing some complaints made by one of them to the purser, relative to the manner in which his meals were obtained, and seeing him, as we thought, rudely treated, we took some little pains to investigate the matter.

We learned that soldiers were discharged at Hilton Head, and furnished with transportation home by government in steamers or otherwise, the steamers being chartered to carry government troops and stores. The owners furnish the crews and all the provisions for passengers, making whatever they can from that source. The soldier is put on board, and if he has any money he can get something to eat—not as good as he received in camp—for one dollar per day: if he has no money, he must do the best he can while in the hands of those who are quite as willing to make their money out of the sick soldier as in any other way. These soldiers are thus thrown together on board a steamer for three or four days, without receiving bed or covering. They must choose the softest plank in their bunks, and with knapsack for pillow, and their old, worn blankets over them, take such rest as sick and wearied humanity can obtain under such circumstances. We visited the accommodations for the soldiers, and must say that after personal examination we came to the conclusion, that a more miserable place for human beings to be packed in like cattle we never saw. Yet in other parts of the ship there was plenty of room where the poor fellows might have been made comfortable; whether the accommodations they received were such as sick soldiers ought to be supplied with by a grateful country, we leave our readers to imagine. We believe that either the Government, the Sanitary Commission, or both these powerful agencies might be of the greatest service to soldiers who are thus returned to their homes, when nothing more can be got out of them, as though they had committed crimes, and were not worthy to be classed even with cattle, which certainly received provisions and much greater attention. And if informed of the condition of things we have observed, the Government or the "Commission" would undoubtedly see the matter properly regulated. Cots or comfortable berths ought to be arranged, and in a part of the ship where at least the cheap luxury of pure air might be obtained. Soldiers ought to be supplied with all that is necessary to render them independent of speculators. We cannot exactly understand the *status* of the soldier after he arrives on shipboard. He is not a soldier, or Government would provide him with rations and bedding; he is not a citizen, or, if he chose, he would be permitted to eat with the passengers, and sleep in the cabin like any one else if he paid for it; and that he is not permitted to do. On the contrary, he is not allowed to walk on deck abaft the wheel-house, among the cabin passengers. Military discipline and ship regulations are all very well when they are consistent, but when they force a man to become a member of that unhappy class of beings commonly known as "steerage-passengers," whether he will or no, and at the same time to pay full cabin passage, they strike us as being painfully absurd. Is it necessary—we ask—that such "regulations" should be enforced against the poor invalid soldier?

Let us consider for one moment the effect of such conduct. The soldier who left his home young, strong, and in sound health, returns to it after serving his country for two long, bloody, and dismal years, his health shattered, his strength gone, his youth become untimely decrepitude. His devotion and faithfulness to his country have cost him all that makes life worth any thing, and will finally take from him life itself. And how is he met on again entering that civilization from which he has been so long separated? Is he received with open arms, caressed, feasted, and his way made smooth before him to his own home,—that haven of rest where at last he may hope relief from his toil, and attention to his multiplied ailments? No: as he nears the confines of his own land and his own people, while yet the roar of cannon is resounding in his ears, and the black gunpowder yet begrimes his face, he is received as an outcast and pariah.

Human vampires stand ready to prey upon him at every turn; his few hard-earned dollars are seized eagerly by these wolves, and he is turned to shift for himself, while they gloat over their miserably-gotten plunder. Let the Sanitary Commission, whose acts in the past have already earned it a reputation that shall do honor to their children when they are dead—let them with their all-powerful arm stretch forth the hand of mercy to the soldier, who, after all the sorrows, the trials, and the dangers of warfare, has found none of them so miserably heartless, so cold-blooded and cutting, as his reception among those who ought to honor him and his forever!

Notwithstanding that we have made this article much longer than we at first intended, and of less interest to the dental profession than we could have wished, yet we cannot refrain from portraying the condition of dentistry in the army, as far as it has been our good fortune to have any experience in the premises. Of course we can only allude to the department of the South, which has been brought directly under our own supervision; but from all we can learn, its condition, dentally speaking, may be taken as a type of that of all the Union armies.

When this war commenced, it may be remembered that we sought to impress upon the Government the importance and necessity of having dentists attached to the army, both as a sanitary measure, and as a means of adding to the comfort of the soldier.

While the army-regulations insist on outside cleanliness to the soldier; while they enforce frequent ablutions and bathing; while in fact they keep the outside of the cup reasonably clean, the inside goes to ruin uncared for. Of course the soldier, under such circumstances, cannot be expected to take much care of his mouth and teeth, when he receives no encouragement, and the commonest precautions against disease and decay are overlooked by those having charge over him. Setting apart the remote or immediate sanitary effect of long-continued inattention to the teeth, we must consider the immediate local results first. Two years of war, with their constant changes of food, with their climatic variations, and their constant deleterious influences upon the animal economy, are more dangerous to the health and life of the teeth than ten years of ordinary wear and tear. In all countries, as is well known, sound teeth form a *sine qua non* in the selection of a soldier; if then they are of so much importance before enlistment, are they any the less so afterward? Again, if a soldier loses his leg, the government takes great pains to supply him with an artificial one; but if he were to lose all the teeth in his head, he might go whistle—if he could whistle under such circumstances—before the government would get him a new set.

If the soldier could only take reasonable care of his teeth himself, he would get on much better, but a tooth-brush is an article not in the regulations and sutlers don't supply them. If they did, it would be at a cost far beyond the soldier's purse and inclination. People can stand paying high prices for luxuries, but not for necessities; they would sooner go without. But if there were a dentist in the brigade, with good tooth-brushes, at the usual prices, every *decent* soldier would have one and use it, and there would be one great gain over the enemy.

Next, supposing the soldier's teeth decay, which they are almost sure to; he cannot ask for a furlough, to go home and get his teeth filled; and, probably, if he got a furlough, would readily find some other way to spend it. There is no dentist in the army, so all the tooth has to do is to rot away at its earliest convenience, when the soldier goes to the surgeon, and the surgeon draws the tooth as expeditiously and as painfully as he knows how.

But, somebody asks, "Why cannot the surgeon attend to the teeth?" For the same reason, we reply, that a ship-carpenter may not be a good house-builder, *firstly;* and for *secondly*, we will give a short description of the dental instruments which our Government has, with wise foresight, attached to the encumbrances of the surgeon: here they are:—

One turn-key.
Two pairs of straight forceps.
One pair of lower molar forceps [beaks half an inch wide].
One gum lancet.
One stump screw [occasionally].
Manufacturer, H. Hernstein.

Now the best dentist in the world could not perform an operation in the mouth with these instruments, with any degree of satisfaction, either to himself or his patient. Even with the most approved modern instruments, the extraction of teeth is any thing but agreeable; with such as we have mentioned, it is torture indeed.

Now is it not wonderful, that with the unexcelled ingenuity of our countrymen expended in improving dental instruments to a point the nearest possible to perfection, the Government will permit itself to be swindled into purchasing such abortions as these wholesale, and thus make rich the most unscrupulous of all speculators, those who speculate on the misery of their fellow-beings. Here, again, we see that with dentists attached to the army, all this matter would be regulated. The dentist would carry along his own set of instruments, and operations, when necessary, would, at least, be rendered as painless as possible, while the Government would be spared a useless and illy-regulated expense.

We come now to considering this subject as it affects the surgeon.

The army surgeon is generally not only utterly incompetent to the proper care of the teeth, but he is also entirely averse to it, and when forced to its consideration, hastens his disagreeable task as much as possible. In these respects, he is quite like his brother in civil life. We propose to relieve the surgeon of this unwelcome labor, and at the same time to secure its being properly accomplished. In former articles upon this subject, we presented a scheme for establishing dentists in the army; which, however, could not be easily grafted upon the present condition of our forces. We propose now to make a few suggestions concerning what would seem to us to be the most simple plan for arranging such a change at the present time.

1st. We would suggest that dentists properly recommended should be permitted to pass through our armies and exercise their vocation, for reasonable fees, being at their own expense in all respects.

2d. In default of the above, we would propose that the Government should appoint one dentist, with one assistant, to every brigade, giving them the same rank as the surgeon and assistant-surgeon, and pay accordingly.

3d. In the event of Government being unwilling to take hold of this matter, we would suggest that the Sanitary Commission should attach a good dentist to each of the departments, with the necessary assistants, and either pay him for his services or permit him to receive fees; a proper and reasonable tariff of prices being first submitted to the "Commission."

If either of these three propositions should be favorably entertained, we think we can give assurance of there being plenty of excellent dentists who would be willing to undertake the duties which would appertain to them as dentists for the army. That the comfort and well being of the soldier would be materially improved by this arrangement, we think we have shown; and certainly no greater inducement could be offered to those in power than this. Never in the history of wars has there been such energy, fortitude, bravery, and patriotism shown, as in the Union armies; and this too in the face of disaster, disease, unhealthy climate, imbecility, and rascality in all departments of management, and incapacity in their leaders. With all these opposing influences against them, they have gone on manfully and cheerfully in the endeavor to conquer this most monstrous and unrighteous rebellion, or die in the attempt. Surely, if men ever deserved attention to their minutest wants, these men do so deserve it, and in bringing this matter, trifling as it may seem to the uninitiated, before the profession, the Government, and the public, we feel that we are only doing our duty, and ask for no other reward than that consciousness.

If we shall have succeeded in interesting our readers, and in arousing those in office, we shall feel that our labor has not been in vain.

In closing, we beg most earnestly to tender our grateful thanks to Col. Osburn, Lieut.-Col. Mann, Dr. Clark, surgeon of the 39th Illinois Volunteers, and to many others who, during our visit to the department of the South, gave us much information, and enabled us to collect the material which we now lay before the readers of the New York Dental Journal.

THE DELETERIOUS EFFECTS OF VULCANITE RUBBER UPON THE HUMAN SYSTEM.

Evil Effects of Red Vulcanite for Artificial Dentures.—A correspondent of the *Lancet* inquires whether any of its readers can inform him "if they have met with any cases of disordered health, and attendant symptoms of severe gastric irritation, from wearing the 'red vulcanite,' now so extensively employed as the basis of artificial teeth by dentists?

"I have at the present time a patient under my care, who was supplied some nine months since with a set of teeth for the upper jaw, based on 'red vulcanite,' who has been declining in health and spirits ever since he has worn them! From being a strong, healthy, muscular, and robust man, he has been losing flesh rapidly, with loss of appetite, sickness, nausea, flatulence, gastric irritation, fetid breath, vertigo, diarrhœa, etc., apparently without any assignable cause. Seeing that he wore artificial teeth, I begged to be allowed to look at them, and it struck me whether there might not be something prejudicial in the *coloring* matter of the 'vulcanite' which was keeping up his somewhat anomalous symptoms. I requested him to leave them off for a month (much against his inclination, as he never thought about his teeth having any thing to do with his indisposition), and a marked improvement in all his symptoms followed. He has since resumed them, with a like result as before.

"Not having met with any similar case, I should be glad of information on the subject—a very important one. I ought to state, perhaps, that the 'vulcanite' is of the original *bright-red* color, a bad imitation of the gums to what I have seen; but he only wears them during the day, and they were supplied, I believe, by what would be considered a respectable dentist."

Dangers of Nipple-Shields made with Adulterated Caoutchouc.—Public attention has of late been called to a subject of some interest connected with the welfare of new-born infants—namely, to the poisonous action exercised on the nursling by various local remedies employed for chaps of the nipple, and to feeding-bottles and nipple-shields of India-rubber containing metallic oxides. At a recent meeting of the medical society of the hospitals, M. Guerard pointed out the dangers for the infant of a popular method adopted for the cure of sore breast. The remedy consists in embrocations over the nipple with a fluid of unknown composition, the part being afterward covered with a thin cap of lead, which is left as long as possible *in situ*, the patient carefully abstaining at the same time from any lotion of the breast. M. Guérard has remarked that the metallic plate shortly becomes covered with a layer of carbonate or acetate of lead, due to its contact with the acidified milk, and as very minute doses of any preparation of lead may occasion colics or cerebral symptoms, the danger to the child is obvious, if it takes the breast under these circumstances.

"Teats, nipple-shields, the stoppers of feeding-bottles in vulcanized India-rubber, are in certain cases objectionable for the same reason. Dr. Eulemberg, a German hygienist of considerable celebrity, was the first who invited attention to the fact. Having noticed that some infants seemed reluctant to take these appliances into their mouths, that others, after having been nursed in this manner, suffered from vomiting, or other disturbance of the digestive organs, M. Eulemberg caused the caoutchouc employed in the fabrication of these instruments to be analyzed by an able chemist, M. Richter, who demonstrated the presence of 20 per cent. of oxide of zinc in the India-rubber submitted to his inspection. The *Annales d'Hygiène*, on the other hand, supply us with the results of experiments performed at Douisbourg on the same substance, which fully confirm M. Richter's statement. Certain nipple-shields yielded as much as fifty per cent. of a mixture of chalk and oxide of zinc; in others thirty-eight and thirty-five per cent. was discovered, and in some eighteen per cent. of *carbonate of lead.* The Royal Medical College of the Rhenish provinces reported accordingly, and denounced the use of vulcanized caoutchouc containing oxides of lead or of zinc as extremely dangerous. At Dusseldorf and Berlin (July and August, 1861), the authorities ordered the shops where these objects are exposed for sale to be visited by inspectors, and threatened the persons engaged in the trade with severe penalties in case commodities of this description, manufactured with *adulterated* India-rubber, were in future offered to the public. Vulcanized caoutchouc—*i. e.* caoutchouc combined with various proportions of sulphur, requires the addition of no other ingredient for the development of the properties that make it valuable. But, as it is sold by weight, some manufacturers do not scruple to add, besides the sulphuret of carbon and chloride of sulphur used in the preparation, other less innocent compounds, such as oxide of zinc, carbonate of lead, sulphuret of antimony, and even a mixture of sulphur and sulphuret of arsenic.

"After pointing out the evil, the decrees promulgated on the subject indicate the remedy by describing the physical characteristics of teats made of *pure* caoutchouc. The latter presents one or two visible sutures; their section is even, brown, and shining; they are thin and elastic, and their texture is semi-transparent and brownish. The teats manufactured with adulterated caoutchouc have no joining; their section is dull, grayish, and dotted with white specks; they are thicker, unelastic, and perfectly opaque. Another important difference is, that the former float, and the latter sink, when placed in water."

Effects of Red Vulcanite.—The inquiry respecting the noxious effects of this substance upon the economy has elicited the following replies through the *Lancet.* Thus Dr. C. Roods says: "I think the question of the influence of the coloring matter (bisulphuret of mercury) of vulcanite upon health has previously been referred to in the *Lancet;* and in consequence thereof I, the latter end of last year, spoke to the dentist who was preparing some artificial teeth for a relative of mine on the subject, who stated that he had never met with a case in which any ill effects had followed the use of the material. My relative has worn the teeth constantly since about Christmas. Early in the spring she complained of diarrhœa, or rather of an irritable state of the bowels; soon after taking food the bowels began to rumble, and free action followed, as if from strong physic, to use her own words. Catechu, with compound chalk and opium—her usual remedy in case of occasional diarrhœa—did not effectually restrain this unusual irritability. It checked it, and from time to time she has been for a short period better, and has hoped it was passing off; still it persists, and although very careful in diet, the least thing disturbs her, and I believe she has not passed a week for six months past without being obliged to take astringents; and I cannot help thinking the vulcanite is the disturbing agent. I have thought of suggesting the suspension of the use of the teeth, and shall now do so. The party heretofore has enjoyed good health, and I am not aware of any other cause of the ailment. I may add that mercurials, previously taken remedially, even in small doses, greatly irritated the bowels of this lady.

"Although it appears improbable that a mercurial preparation combined with an impermeable substance, like vulcanite, should escape therefrom in sufficient quantity to affect the system, still facts may prove stronger than probabilities in the matter; and although many persons wear the material without prejudice and with great satisfaction, occasionally a party, peculiarly susceptible to the influence of mercury, may possibly suffer from the coloring matter; and, if so, it would be desirable to select some other than a mercurial pigment for tinting the vulcanite, or coralline as it is termed."

On the other hand, Thomas H. Harding observes: "As to the occurrence of disordered health and some gastric irritation from wearing the 'red-vulcanite,' now so much used, I beg to state, that after a very extensive use of this substance, I have not known any instance of untoward symptoms that have resulted from wearing it in the mouth. Indeed, I can fully indorse an opinion which I gave in the *Lancet* in a former letter (May 4th, 1861, p. 452), now nearly eighteen months ago, that I had then treated nearly 200 cases with this basis for artificial teeth, and had not known a *single* instance wherein the slightest ill effect was produced by its use. With increased experience I again reiterate my testimony in its favor, and the symptoms described by your correspondent must have arisen from some other cause altogether, possibly from an unhealthy state of the mouth, or from some mercurial amalgam in diseased teeth. The general experience of dentists now very satisfactorily proves that the vulcanite so largely employed is a harmless product, and may be worn for years without any inconvenience. Indeed, I have just received a letter from a lady at Eastbourne, who writes that she experiences the greatest comfort and ease from wearing a set of teeth mounted in a vulcanite base, and previously she had been a great sufferer, and her health generally was disordered, from not having the previous set of teeth properly adjusted in her mouth.

"Vermilion is sometimes adulterated with red-lead and penta-sulphide of arsenic; but I doubt even then whether it would produce the effects which 'Inquirer' attributes to it. I am in the habit of giving to its surface a very fine polish, which cannot in any way be affected by the fluids of the mouth. Although this substance is so highly appreciated, I never recommend it in preference to gold, unless on the score of lightness.

"I think that on careful investigation 'Inquirer' will find the cause of the impaired health to be due to some other influence than that of the vulcanite."

Noxious Effects of Red Vulcanite in Artificial Dentures.—The question, whether the coloring constituent of red vulcanite, employed for artificial dentures, does exert a deleterious influence upon the human economy, is attracting attention in England. It is a subject of so much sanitary importance as to be worthy of general investigation. The evidence heretofore presented is at least sufficiently strong in the affirmative to enforce the necessity for greater precaution in the use of such substances for application to living structure. The following additional observations of "Inquirer" (*Ibid.*), with those in the preceding communications, are of much practical interest.

"The case related by Dr. H. C. Roods appears to be a modified one of my own patient, and I have no doubt his relative's symptoms will subside with the removal of the teeth, and, if properly carried out, I should like to know the result. 'Facts are stronger than probabilities,' as the doctor has very justly observed, and it is a rather startling fact that his relative 'has not passed a week for six months past without being obliged to take astringents!' So with my own patient. And this brings me to make a few observations on the letter of Mr. Thomas Harding, in your last impression. That he appears to have had some experience in the application of the vulcanite, after his statements, I am free to admit; and he seems to speak very confidently of its innocence, as far as *his* knowledge extends. But I would respectfully ask him if *he* would be likely to be consulted for any disordered health that might arise in his numerous patients after his supplying the teeth? And if not, how could he ascertain what effect the wearing of the 'vulcanite' might have? In the great majority of cases, the patients themselves (nor indeed their medical man) would scarcely dream of attributing their indisposition to the wearing of 'false teeth,' based on (as I firmly believe to some constitutions) a very objectionable and deleterious material, as originally manufactured, and consequently would not seek the advice of their dentists! As in my own patient, he did not go to his dentist with his ailments, the true origin of which was well-nigh (as it might with others) being overlooked by me.

"That the subject has engaged the attention of the dentists generally, who have been anxiously watching the results of this new material, I am well aware, having been informed by one of the leading men in this town, who, not so thoroughly satisfied of its harmlessness as your correspondent, Mr. Harding, has himself removed several sets of the old red vulcanite, supplied by him, from his patients, being convinced in his own mind, from their description, that the material was acting prejudicially on their systems, and doing them harm! This I had from the gentleman himself, voluntarily, on conversing with him upon the subject. That it is a most useful substance for purposes of nice adaptation, comfort, and ease of wearing, is obvious; and deprived of its noxious pigment (whatever it may be), would doubtless prove a great boon to both dentists and the public.

"My patient's health is now rapidly improving, solely from the removal of his teeth; and though I have carefully investigated his case further, I can neither discover an 'unhealthy state of the mouth,' nor any 'mercurial amalgam in diseased teeth' (of which he has none), as suggested by Mr. Harding, to account for the symptoms; and he is now so fully convinced of the true source of his impaired health of late, that nothing would induce him to place them in his mouth again in their present form."

Rubber in Philadelphia.—By D. S. Goldey.—By reading the discussion of the Pennsylvania Association of Dentists, as published in the February number of the Dental Cosmos, I find that Drs. Fitch and Flagg disapprove of the use of rubber as a base, in consequence of its containing metallic mercury.

Dr. Fitch says mercury can be pressed out of it, before it is vulcanized, between the thumb and finger; and that after it is vulcanized and polished, its mottled appearance is owing to the presence of that metal.

Dr. Flagg says he has "yet to see the first piece of unvulcanized rubber out of which mercury could not be pressed by the thumb and finger."

Dissenting from the opinions of these gentlemen, but anxious to ascertain their correctness, I submitted rubber of the H. R. Co.'s make to the same tests, and discovered in great number small grains of what appeared to be *sulphur*, but no mercury. Half a sheet of rubber was then made into a ball; put in a vice between iron plates; great force applied; expected to find the mercury pressed to the extremities, but not a particle appeared there. A strip of rubber five inches long and one wide, with a strip of gold-foil same width, fastened above and below, at one end extending half an inch beyond the rubber, was passed through the rollers (rollers very close). In this little sack of gold-foil I expected to catch a good lot of mercury, but not a particle of it was perceptible, even with the aid of a microscope.

For these and other reasons, I conclude we have no satisfactory evidence for believing that there is any free mercury in the rubber made by the H. R. Co. If there is mercury there, and the model lined or covered with tin, as it usually is, much of the mercury would be pressed against and adhere to this metal, and the balance would be pressed to the surface in the surplus rubber when the all-powerful screws of the flask are brought to bear upon it.

If "it can be pressed out with the thumb and finger," it most assuredly would yield under this intense pressure. If the mottled surface of the vulcanized rubber is caused by the presence of free mercury, and not removed in rubbing and scrubbing with pumice and polishing with chalk, etc., it is only necessary for any one, at any time, to *exhaust, by suction, the air between the tongue and plate*—not between the plate and roof of the mouth—and immediately all the mercury near the surface would fall upon the tongue; and as the light spots occupy one-third of the entire surface, of course one-third of the surface of the plate would disappear, leaving the plate about as smooth as a grater.

The mottled surface is probably caused by the unequal distribution of the little grains above spoken of. On examining them with the aid of a microscope, they appear to be of a straw color. They are translucent; mercury is opaque. They are of every variety of form; mercury is always, when in minute quantities, of a globular form. They are hard; mercury is soft. They are solid; mercury is fluid, and can form no part of the surface of the plate properly finished and polished.—*Dental Cosmos.*

Oswego, N. Y., 1863.

By the above articles, it will be seen that the deleterious properties contained in the compound known as "Red Vulcanite," and to which we have so often alluded, are beginning to attract the attention not only of the dental but the medical profession abroad. We were among the first of the profession in this country to experiment upon the merits of this article as a base for artificial dentures, and, after about two years' experience, we had observed many instances of its deleterious effects upon the health of our patients. We had noticed cases of its producing general irritation of the mouth, mucous membrane, and alimentary canal; in some instances even resulting in dyspepsia; in others, the effect resembled salivation. With these results before us, and after careful consideration and examination, we felt it our duty to warn our brethren of the profession, which we took occasion to do at the annual meeting of the American Dental Convention at Saratoga Springs, in 1860. And we also desired, if possible, to ascertain from the proper source the exact material forming the compound. We were answered, some time after this inquiry, by the authorized agent of the American Hard Rubber Company, that the coloring was produced by the bi-sulphuret of mercury, but in what proportions was not stated. We then wrote an article in our January number of the JOURNAL for 1861, giving the process of making the bi-sulphuret of mercury, and its component parts, which were as follows: 300 parts mercury, 114 sulphur, 75 potassa; or in about that proportion. We also showed, in the same article, that it would be impossible—as claimed by the advocates of rubber—for the mercury to escape under the pressure of steam used in the vulcanizing process, even were the heat carried to a much higher degree than required by the article used for a base for artificial teeth. We also showed, from the best medical authorities, that the bi-sulphuret of mercury would produce the same medical effect as pure mercury.

By careful investigation, we have since ascertained that nearly one-third in weight of the red vulcanite used for dental purposes is composed of bi-sulphuret of mercury, used in coloring it. We also find that, in the process of mixing the ingredients necessary to form red vulcanite, there is no loss. And, finally, we have proved to our entire satisfaction that the weight of the article, before and after vulcanizing, is identical. By these and other experiments, made during our investigation into this matter, we have arrived at the evident conclusion that the bi-sulphuret of mercury which, it is admitted, enters into the composition of red vulcanite, must remain in the material after it is vulcanized; and as the bi-sulphuret of mercury is confessedly deleterious and injurious in its effects upon the human system, the red vulcanite when finished must, *ex necessitate*, partake of the same properties. Therefore, and because of the results of after experience here and abroad, as given in the above cases, we object to the use of red vulcanite as a base for artificial teeth.

Again, in the case given in this article, presenting the bad effects upon the health of children caused by their sucking the vulcanite teat, we have a perfect parallel to the involuntary efforts made by wearers of artificial plates to keep them in their place; if, in the one instance, the oxide of lead or zinc could be extracted in sufficient quantities to materially injure the system, we see no reason why a similar process should not produce a similar result, and extract the bi-sulphuret of mercury from the red vulcanite.

Secondly. We object to the use of this composition because of the great absorption of the alveolar process and the bony structure of the mouth constantly going on under it, and, as we firmly believe, induced by it, since with no other composition is it so evident: it leaves the gums in a soft, flabby condition, and renders it almost impossible to wear artificial teeth with any degree of satisfaction.

Third. We object to the red vulcanite, for the reason that it is only with the greatest care and trouble that it can be kept clean, as nearly every one who wears it will testify to the fact that a slippery, slimy deposit is constantly formed upon its surface, which is only removable by constant care and attention; and in the mouths of those who use tobacco it becomes positively unbearable, not only to the wearer, but to any one who may be brought in contact with him.

Fourth. We object to it as being utterly expressionless, even when inserted by the best operators and in the most artistic manner. It is impossible to so arrange the teeth upon it as to produce any thing like an approximation to the natural expression of the mouth.

Fifth. We object to it because of the grave injury it is working to the profession. The cheapness with which it can be prepared, and the ease with which any passable mechanic can produce something out of it which shall sufficiently counterfeit a real artificial denture to deceive the unwary patient into purchasing, are direct inducements to charlatanry, and open invitations to those who are incapable of any other profession to take up that of dentistry. Our profession is different from every other, in that we are forced, as it were, to become a second nature; to imitate successfully those beautiful organs with which a beneficent providence has so bountifully provided us. Is it not evident that if we fail to do our work honestly and properly we insult nature and disgrace ourselves? It requires not only mechanical skill, but the taste and appreciation of the artist, to restore properly the contour of the face when it has been disfigured by the loss of the teeth. How can we expect that the uneducated mechanic can leap at once out of his ignorance, and with such base material reach the same point of excellence arrived at by the skillful dentist, who has the advantage of the purest and best material, and the experience of years to aid him? Yet it is to such men that the red vulcanite holds forth its alluring inducements. We believe in progress; and he who considers this material as progressing beyond such as have been heretofore used is not only far behind the age, but is constitutionally incapacitated from improvement. We are aware that, in what we have here written, we shall incur the ill-will of many; but we wish it to be distinctly understood, that what we write on this subject we write from a sense of duty to our profession, our patients, and ourselves, which will ever lead us far beyond malicious criticism.

Although at the outset we stood alone in our opinion, and have been forced to fight every inch of our way against adverse views and powerful influences, yet we are proud to see that our labor has not been all in vain. The sunlight of truth is gradually dissipating the mists and shadows of ignorance and error, and answering voices, both at home and from distant countries, tell us that our work is appreciated and that we are right. Had only one-half the time, money, ingenuity, and influence been bestowed in the true interest of the profession on the improvement of such materials as we already possess, that have been employed to advocate and bolster up this abortion of ignorance and impudence, we should stand in a much more honorable position before the world than we do, nobly as we have advanced, in spite of all the trickery and quackery inseparable from every calling.

THE DUTY OF DENTISTS TOWARDS PARENTS AND GUARDIANS IN REFERENCE TO CHILDREN.

To the miserly, skin-flint dentist, who, rather than lose his fee of fifty cents, will pull a child's tooth two years too early, and thus entail upon the unhappy subject of his malpractice pain and deformity, these lines will come most obnoxiously; but to him who, being a dentist, does not forget that he is also a man, and who does not cease to remember that to alleviate pain is the true destiny of his calling, and that his recompense therefor is only secondary, they will perhaps carry something of the intention with which they are written.

With this belief, we proceed to examine into the merits of our subject, "*The Duty of Dentists towards Parents and Guardians in reference to Children.*"

It is not only the duty, but the true interest of every dentist to, as far as possible, educate his patients to perform properly their own part in reference to their teeth and those of children placed under their care.

Every practising dentist will bear witness that the profession receives more trouble, and more really laborious and disagreeable tasks, from patients who are entirely and criminally ignorant of the first principles of human physiology and anatomy, than from those who have a good general idea of how they are formed, and know when an operation upon the teeth is really needed, and will not insist upon its performance when unnecessary. Such persons having charge of children are careful to watch the formation and growth of their teeth, and at the proper time to bring them before the professional dentist for his examination, and, if necessary, for operation; while they have no whims or fantasies as to the imminent necessity that every tooth should be drawn the moment it aches; and so they relieve the dentist from all external annoyance, leaving him free to use his own judgment and care in the case.

But it is not to be expected that patients will enter upon the study of dentistry, either for the benefit of dentists or of themselves, and it is therefore necessary for the practitioner himself to induct them into so much knowledge as shall be necessary to smooth their road and his own. This may readily be done by acquainting them from time to time with the origin and formation of teeth, the periods of dentition, the causes and progress of disease, and such other matters as may seem important to bring to their knowledge; the result will be found, as above stated, to be eminently advantageous to both parties.

We cannot sufficiently express our contempt and abhorrence for the dentist who, rather than take the little trouble necessary to the course we have pointed out, or from a still meaner selfishness, will perform operations against his better judgment and his common sense, knowing that he is about to entail unnecessary suffering on a fellow-being, and perhaps cause to be irregular and unlovely, features which might have been well defined and beautiful. Admitting then that the dentist has honorably and humanely determined to instruct his patient, to the end that as much suffering may be saved as possible, it becomes necessary to point out the way in which this instruction can best be given; and to this purpose we propose to devote ourselves in the present article.

Beginning at first principles, and with special regard to the comfort and future welfare of children, the patient should be inducted into the mysteries of the first dentition.

It will soon be found that the popular ignorance in regard to the formation of the human body is in no case more manifest than in regard to the teeth. For instance, not one in a thousand is aware that at birth the jaws contain the rudiments of fifty-two teeth—twenty temporary and thirty-two permanent. Indeed, the number of the temporary teeth is a matter of speculation to most people. Let it then be understood by the parent or guardian, that at the time of birth each child is endowed with the bodies of ten teeth in each jaw, which, however, only begin to make their appearance through the gums at about the sixth or eighth month; that the obtaining of the full set of temporary teeth varies in time up to two or three years; and that during that time the germs of the permanent teeth are being steadily developed, ready to fill their places when their work shall have been accomplished, and they make way for their more lasting followers.

If it shall then be understood that the regular and proper development of the permanent teeth depends somewhat upon proper care being taken of the temporary set, the necessity for the most careful observation and attention will at once be made obvious. Of the temporary teeth, there are four *incisores*, two *cuspidati*, and four *molares* in each jaw; which are finally replaced by the permanent set, beginning at about the sixth or seventh year and continuing until the twelfth or fourteenth year, when the permanent set is complete, with the exception of the *dentes sapientiæ*, or wisdom-teeth. The permanent set consists of four *incisores*, four *cuspidati*, two *bicuspides*, and six *molares* in each jaw, making thirty-two in all.

Having thus been made acquainted with the names and number of the teeth, it is necessary to instruct as to the manner in which the permanent set succeeds the temporary.

This, it will be explained, is done as follows. The germs of the permanent teeth are situated under the temporary, and in the process of their growth constant absorption is taking place, until the roots of the temporary have been entirely absorbed, the permanent teeth meanwhile steadily following the temporary until the latter are finally driven out of the gums, by the process of shedding, as it is called, and their places are taken by the permanent teeth in the following order:

At about the age of five or six years, the first permanent molars make their appearance above the gums, a sign that the shedding of the temporary teeth is about to commence; indeed, under favorable conditions, they will then begin to drop out at various times as their roots become absorbed. From this time the teeth require constant and careful attention, and should be inspected by the family dentist at least as often as once in three months.

These first molars are so frequently mistaken for a portion of the temporary set, and such unhappy consequences sometimes result from this error, that the attention of those having the care of children should be particularly directed to this point. These teeth are sometimes permitted to go to decay from want of care, and under the impression that they are the temporary teeth, and only following their proper course.

Sometimes they are even extracted for some slight cause, when the whole arch of the jaw becomes imperfectly developed, and the most painful and tedious cases of irregularity are often the result.

The veriest neophyte in dental science cannot but perceive that such carelessness is suicidal, as far as the teeth are concerned.

These teeth are the pioneers and guides of the new set. They stand as landmarks in the jaw, and their extraction or loss by any means may be compared to the capture of the outlying pickets of a sleeping army, in disastrous consequences.

Another point is worth notice: these teeth seem to be placed in the exact position where they are most needed, as the temporary teeth are falling out, and the office of mastication must be performed somehow, and falls naturally upon these powerful grinders, so admirably placed to perform their allotted labor.

Some time between the ages of five and nine years, according to the health and strength of the child, and after the cutting of the first permanent molars, the lower central incisors make their appearance. Next come the upper central incisors; then the lower lateral incisors, and next the upper laterals; this is the usual order of appearance, although it sometimes varies. After this there is a period of repose, of varied duration, lasting sometimes from two to three years. Between the eighth and fourteenth years, the bicuspids and conoids, or canine teeth, make their appearance, generally in the order mentioned. Finally appear the second molars, soon after the canines, or at about the age of thirteen or fourteen years, and the set is complete with the exception of the *dentes sapientiæ*, or wisdom-teeth, which are cut anywhere from eighteen to sixty years of age.

It will thus be seen that no exact rule can be given as to the date of appearance of the permanent teeth: all depends on the constitution, training, and general health of the subject; but if the information we have just suggested be given to the parent or guardian, it will be found to meet every requirement of the dentist, in order that the child may be insured proper treatment, to secure a regular and healthy set of teeth. During the period of shedding the teeth, if a mother has the least pride or ambition that her children shall have beautiful and regular teeth, it will then exhibit itself, even though she may have been before careless and thoughtless in the matter.

That parents should be anxious about their offspring at this period is perfectly natural, and it is not for the dentist to discourage such anxiety, but rather to encourage it; indeed, if every parent would feel such anxiety at such times, their children would reap the benefits of greater care and attention than many of them receive.

It is above all necessary that nature should not be retarded or misled in her movements by any carelessness of treatment, which shall permit disease or irregularity in the temporary teeth to operate against the regular and natural appearance of the permanent set; and having disclosed the phenomena, it becomes important to show what conditions may be made to militate against their proper occurrence, and what precautions must be taken in the premises.

It will of course be readily seen upon consideration, that the breadth of jaw which is quite sufficient for ten teeth, would not at all suffice for sixteen; and nature has provided for this important deficiency in the following manner:

At about the third year, a change in the form and dimensions of the jaw begins to take place, which affects the appearance and expression of the whole countenance; from that age until the completion of the permanent set, that portion of the jaw finally occupied by the permanent *molares* gradually lengthens, thus giving room for the increase in number of the permanent over the temporary set.

This fact being remembered, comes the first caution which should be given, as well to the dentist as to the parent or guardian, viz: to avoid the too early extraction of the temporary teeth, since, if they are drawn before the permanent teeth are ready to take their places, the jaw will not sufficiently lengthen, and an irregular and deformed denture will be the result.

The responsibility then devolves upon the dentist of impressing upon the mind of his patient the great importance of not tampering with the extraction of children's teeth: if they seem to need professional attention, they should at once be placed under the care of a competent dentist.

Sometimes the excuse of the parents will be, that they are unable to bear the necessary expense which would accrue under professional treatment. To this the answer should be, that the dentist, if he has any feelings of humanity, will undertake to give the necessary advice gratis, rather than permit a child's teeth to be ruined for want of it. But it is not from poverty alone that people permit themselves to assume the responsibilities of the dentist: often we see those who are in easy circumstances thus tampering with the health, beauty, and comfort of their children. How often have we seen the poor little innocent child, with a thread tied about the offending member, made to suffer all kinds of torture, in the misguided attempts of the parents to take upon themselves a trade of which they know nothing, and for whose practice they are thoroughly incompetent. The impropriety of such action as this, under any circumstances, ought to be severely commented on by every dentist, in his conversations with his patients: there can be no excuse whatever for such reckless and needless want of common care in the treatment of children.

Every dentist knows that some of the worst cases of irregularity coming under professional treatment, are those resulting from some such action as we have just described concerning the second dentition. The best dentist in the profession may well be puzzled to decide when a temporary tooth should be removed in order to obtain the best result, even after the most rigid and careful scrutiny; how seldom then should those having no possible acquaintance with the conditions of the mouth and teeth, venture to change them at hap-hazard! Finally, it should be remembered that the same beneficent and all-wise laws that provide for the coming of those teeth that are to do service for a life-time, provides also for the proper disposal of those which are no longer required. If by reason of disease, or faulty organization, the human system is unable to second nature in her efforts to provide for its well-being, then, and then only, may the dentist come in with his assistance as needed. We are the victims of interference with nature's laws, generations back, and, from birth until death, must sometimes receive aid from science; but that aid ought never to be offered unless absolutely needed, and then only by those fully competent to give it properly. If this rule were followed by all, much suffering and much disfigurement would be saved.

The motto of when we are in health we need no medicine, is as applicable in dentistry as in medicine.

Having thus shown the importance, and indeed absolute necessity, of care in reference to the natural and regular development of the teeth, and the manner in which irregularities may be guarded against, we come now to a division of our subject of primary importance, and which cannot be too strongly impressed upon the minds of those having the care of growing children; we refer to the necessity for that attention which aspires only to produce absolute cleanliness and purity in the teeth, as a means subservient to the end of giving the necessary strength and ability to perform their required duties of the temporary as well as the permanent teeth. This subject has been far too lightly touched upon, not only by our dental periodicals, but by those who have had the care of advising families upon matters relating to the teeth, and upon whom really rests all responsibility in the premises. Some dentists think so much of the present, and so little of the future, that they really conceive that by permitting their little patient's teeth to fall into disease and decay, which timely advice would have prevented, they are subserving their own best interests, forgetting that the duty of the physician is prevention as well as cure, and that the little sufferers, or those who have charge of them, will hardly feel confidence in one who could have saved pain, and carelessly or meanly refused to arrest it when a few words would have done so, for the sake of perhaps a contemptible fee more or less.

Such men disgrace their profession and injure themselves in the eyes of their patients, who will be much more willing to trust their dentist, if they perceive that he has some friendly sentiment for their interests as well as his own, and is unwilling to trifle with their health for unworthy considerations. If the dentist wishes to make himself the friend and respected adviser of families with which he has professional connection, let him take our advice to heart, and by a few occasional words of caution, show to his patients that he is above all the mean trickeries which his greater knowledge might render safe, and he will soon reap his reward of extended patronage, as well as a clearer conscience.

Let him then impress upon the minds of those who have the care of children from their birth, that the first, last, and greatest rule for the preservation of the teeth is *cleanliness*, CLEANLINESS, CLEANLINESS! All conceivable ideas exist in the popular mind as to the *modus operandi* of keeping the teeth clean: with some it is a periodical duty, performed every morning before breakfast, and consisting of a hasty rub with a brush dipped in tooth-powder, a rinse with a mouthful of water, and a "thank God!" that it is done: with others, a scouring with some acidulated nostrum, much more deleterious than entire inattention, causes their teeth to look cleanly for the time, and encourages destruction for the future: with others, entire confidence in Providence, and no care whatever, is the general rule: finally, thank Heaven! there are those who rate cleanliness as next to godliness, and keep their teeth as pure as infants' consciences; they are those who come to the dentist as the refreshing showers to the parched earth. This with regard to adults. As to children, who ever trouble themselves as to whether their children attend to the cleanliness of their teeth, even when quite grown up? and who ever dreams of such application to temporary teeth?

Now the manner in which to treat such persons is to shame them by the application of a little common sense. If asked as to a condition of dirty face, hands, feet, head, or body, their answer would at once be, an application of soap, sand, brush, and, if necessary, pumice-stone. Now the only point is to make them sensible of the importance of similar treatment in regard to the teeth, and the work is done. Let them be made to understand that the teeth are the most delicate, as well as the most beautiful and the most prominent of the organs of the human frame.

Let it be impressed upon their minds that, from inception up, they need the most fostering care, to prevent the insidious attacks of the secretions and acids of the mouth, increased in power by neglect and carelessness, which promote the accumulation of substances in the mouth and between the teeth, which finally result in those agents so deleterious to the composition and structure of the teeth. Let them be instructed that this attention and care should not alone be confined to the permanent teeth, which are better able to bear the dangers to which they are exposed; but that the temporary set—those frail and ephemeral little models of beauty—depend greatly for existence upon the attention which they nearly always fail to receive.

Finally, let it be told to parents and guardians that the teeth *must be kept clean* from their first appearance. Before children are able to attend to such things themselves, their parents or guardians should do it for them. But it will be found that with a little instruction and encouragement, they will regard the handling of a tooth-brush as a privilege, and be even more faithful to it than adults. If the teeth cannot be kept clean with brush and water, let soap, tooth-powder, charcoal, pumice-stone, or any thing be used which will keep them clean, with the one principle in view, that *clean they must be.* By this means we keep off decay, which is very likely to appear in the temporary teeth.

We do not mean by our remarks to recommend using charcoal, pumice-stone, and all such harsh remedies, as a tooth-powder for constant or even occasional use, except in extreme cases. The idea we wish to convey is, that should cold water and the brush fail, or tooth-powder with brush, when thoroughly applied, not be sufficient to keep them perfectly clean from any cause, then use any thing that will produce the result without destroying or injuring the teeth, the same as you would do with your child if he should make his appearance in your presence with a soiled face. All that is necessary to do is to be as scrupulous about keeping the teeth clean as the face.

If parents could be made to understand how much pain could be prevented and spared their dear little ones, for whom they would sacrifice every thing, even life itself, and the long and wakeful nights they are often compelled to pass, the many dollars to be expended for regulating and filling teeth, and in fact the thousand ills that might be avoided by timely attention, we are sure the responsible parties would be thoroughly awake to their duty.—Ed.

EDITORIALS AND CUTTINGS.

THE BEST MATERIAL FOR ARTIFICIAL DENTURES.

We are often asked what we consider the best material used by the profession as a base for artificial dentures.

In considering this question, certainly a most important one both to the profession and their patients, we shall only mention those substances that we believe to be the *best*, taking into consideration all the points that go to make up a really good and valuable substance for the purpose, and all the obstacles to be overcome by such as desire to reach perfection in every thing connected with the insertion of artificial teeth; while we thus give as concisely as possible our belief in regard to this subject, we shall also try to adduce good and sufficient reasons for such a belief.

Of the many substances in use among dentists, we should first select platina, with a continuous gum, as being preferable to all others for full sets. For peculiar cases, and in partial sets, we should select gold as the next best material.

In order to prove whether or not we are correct in our judgment and selection, it is first necessary to show what the dentist is expected to do when he inserts an artificial set of teeth.

If he is an honorable man, he will look for something higher than the mere paltry sum that pays for his time. He will look for a greater reward to the inner consciousness, that shall tell him he has performed his labor well. He will feel that by being faithful to his patient he honors himself.

Why cannot the dentist who performs, in constructing an artificial denture, a task requiring true artistic qualities, and the most delicate perceptions, learn to demand of himself as rigorous a regard for duty as does the artist in color.

The painter has always higher aspirations, and looks upon each new success only as the stepping-stone to something greater and more worthy. Does he try to do cheap work, or quick work? Not he. He looks only to the quality of the result. And his patronizers follow fast after him. As the quality of his pictures improves, his prices are increased, and yet he finds no difficulty in obtaining whatever he chooses to ask. The public is always very willing to pay a good price for a good thing.

Now we desire the profession to consider these facts, and to reflect that they can with equal justice adopt a similar rule.

The dentist is an artist, and one of the highest class. It is his province to operate upon the human body, in restoring those organs of nature so essential to health and beauty. He is to replace the human teeth by substitutes that shall not only imitate their prototypes in color, form, texture, and durability, but shall be capable of performing their work as satisfactorily, and without injury to the system, as it is possible for human ingenuity to devise them.

The dentist has, therefore, a great responsibility hanging over him, and ought never to relax his attention or his care. Only the purest and most healthy materials should ever be selected as a base for artificial teeth.

A platina plate, with a mineral compound assimilating to the natural composition of the teeth, we find preferable. In form, it may be arranged to accurately imitate that for which it is a substitute, while it is capable of being made to exactly represent nature in her most healthy condition. By means of this substance, properly moulded, in the hands of the skilful and artistic operator, the contour of the face may be restored; its full and natural proportions brought out; and the freshness and roundness of youth made to take the place of premature old age. With no other material can as much expression be given to the human features as with continuous gum work. It can be moulded and fitted to fill any hollow, to conceal any deformity, caused by the loss of the natural teeth.

For these reasons, therefore, we place the continuous gum at the head of all the substances in use for this branch of dentistry. First, for its purity and cleanliness; second, for its near similarity to the natural formation in color, texture, and general appearance; third, for its adaptability in restoring the natural contour and expression of the face; and finally, and most important of all, for the fact that it contains no substance of an injurious character; and cannot be affected by the acids of the mouth, or any substance that may be brought in contact with it. No impurities can enter into its composition.

Some of the objections urged against the continuous gum are, that it is expensive, difficult to make, and difficult to repair when injured or broken. These very objections are its greatest recommendations.

No one ever rose to the highest pinnacle of fame in any of the learned professions, including even dentistry, without a thorough knowledge of the business he was pursuing; and that can be, and has been, accomplished only by hard study and constant labor; and he who has thus risen becomes a lover of difficult tasks, and is best pleased when his whole energy is tasked to its utmost to produce the greatest possible result that can be effected in his calling or profession.

There is no dentist who will not admit that in close imitation of nature, purity, and indeed in every thing that is required of an artificial set of teeth, the continuous gum work reaches to greater perfection than any other substance that has yet been devised. And it is also well known that all the difficulties connected with its manufacture have been readily overcome by some of the profession, and might by nearly all, if the requisite amount of trouble and energy were bestowed on it.

We do not say all, for we are forced to admit that in the dental profession as well as in others, there are some who are too indolent or too stupid ever to attain to any very high standard in any thing.

We therefore address ourselves only to those who are striving to reach that point which will do honor to themselves and their profession, in meting out strict justice to their patients. And we beseech them to discountenance all attempts to lower this standard! Let them discard the use of all materials unfit to place in the human mouth, and resist every attempt to perform inferior work, for the sake of gaining a little more profit out of their fee. How much injury has been done to the profession by their weakly permitting themselves to be diverted from the true path by the cry of "cheap material," "cheap work," all of which lowers us in our own estimation and that of the public; for it is impossible for a bad operation to go forth to the world without reflecting, more or less, upon the whole profession. We would therefore urge every dentist, by good works, to sustain his profession and its members, and not by any act of his cast discredit upon them. Let him demand for his services and his advice a fair and reasonable compensation, in proportion to the extent of the task. Let him perform the duty honestly and well, and he will receive his full share of patronage.

It is a melancholy fact to consider that a large majority of the artificial dentures inserted, disfigure rather than improve persons who are obliged to wear them. And for this, one reason is the use of cheap materials, with inferior work, by dentists who have not that regard for the honor and usefulness of their profession that they should have. Also a lack of artistic conception in restoring the expression and *contour* of the face.

Another point to which we desire to call attention is this: the impression is frequently given to the public, and it is now a popular fallacy in regard to this matter, that one set of artificial teeth will last a lifetime, provided ten or twelve months are permitted to elapse between the extraction and fitting the artificial set, to admit of the absorption of the alveolar process. Although digressing somewhat from our subject, we cannot refrain from saying a word in reference to this grave error.

When the teeth are all destroyed, by decay or otherwise, especially in young persons, there will be continual absorption going on for several years; and a set of teeth inserted at the end of one year from the period of extraction, may not be of the required length to give the right expression, or fit well at the end of four or five years, from the fact that absorption has more or less changed the size of the jaw and the whole expression of the face, requiring another new set.

At the end of a few more years another set may be needed, and even a fourth may be found requisite during life, to keep the features in their natural shape. Yet so thoroughly have the profession impressed the public with the idea that one set of teeth is all that is necessary for a lifetime, that were we to propose a second to our patients, they would, as a general thing, accuse us of desiring to rob them, or to obtain money under false pretences; yet nature supplies two sets of teeth to each individual, and if they wear out, what ought to be expected from artificial work?

Now let us consider this a little. There is no human being, no matter how poor or how ugly, who does not have some pride in his or her looks and appearance. The consequence of this is, that expensive hats, coats, dresses, shawls, and ornaments of various kinds, are eagerly sought after, and adapted to the desires of the wearer. Every thing, in the way of dress and decoration, that will beautify, is purchased, and in many instances regardless of expense; and when soiled or worn out, is replaced in the same extravagant and thoughtless manner. But if the teeth are lost or destroyed, the one in need of a new set will shop from dentist to dentist, and haggle until a cheap set is obtained, which only serves to indicate and increase the deformity. Others, who are not so easily satisfied, but must have the best in the market, will beat down the operator, or pay him his price so grudgingly that he will seem to have done the work at half-price, so little satisfaction does he get from it: and these are the most difficult to suit, and invariably give the most trouble. Finally, they go away satisfied that they have been robbed, and spare no pains to make their opinion public; and if another set should ever be required, nothing would convince them that they had not been swindled by a dishonest dentist.

Now all this disagreeable condition of things might be spared if dentists would only instruct their patients that artificial teeth, like every thing else, are not indestructible, but subject to accidents; and also that there are changes constantly going on in the human system which will often render it necessary to duplicate sets as required.

There are a few patients, and they deserve a kind word of remembrance at our hands, who can actually appreciate the real truth in these matters. Such persons understand the true value and importance of sound and beautiful teeth; if they are able, they save the natural teeth;

but if that is impossible, they have the best quality of artificial work executed for them, and willingly pay for it, when well done, its full value; and if it should become necessary to repeat the operation several times, they readily recognize its necessity. Such patients form the brightest recollections of the dentist's professional life.

TRIAL OF DR. ADDINGTON.

On Monday, March, 9th, before the Court of Oyer and Terminer, Judge Barnard presiding, Richard B. Addington, dentist, was put on trial under three indictments by the grand jury, for assault and battery with intent to kill; the assault committed on the persons of Mrs. Rich, D. W. Miller, and the wife of the latter.

The circumstances will doubtless be remembered by our city readers: Mrs. Rich kept, and doubtless still keeps, a private boarding-house in Eighth street: Dr. Addington occupied rooms and boarded with her. Some months ago the occurrence took place which gave rise to the trial, as follows:

Dr. Addington had previously had some difficulty with Mrs. Rich, and on the occasion mentioned, as was alleged, she entered his office, and after an angry altercation between them, was ordered by Dr. Addington to leave the room; this she did, but returned shortly afterward, accompanied by Mr. Miller and his wife, the two other complainants, also boarders in the house.

Thus far the stories of complainant and prisoner agree, but from this point they diverge; the complainant alleging wilful and malicious and unprovoked assault and battery, with intent to destroy life, while the prisoner pleads self-defence and no such intent. Dr. Addington's story is, that when the parties entered his room, he called upon the complainant, Miller, to protect him against the two evidently infuriated women, but that, instead of doing so, he (Miller), urged on by Mrs. Rich and his wife, seized him (Addington) by the throat, nearly choking him, while the two women beat him about the head with pitchers and any thing else they could lay their hands on.

Literally in self-defence, and in fear for his life, as he stated, he then seized a dental instrument and struck at Miller a number of times until he had effected his object, which was his own release; in the mêlée the "women, who continued to beat him, were both cut with the instrument, although the prisoner had no distinct recollection of striking them, or of any intention to do so. After the affair was over, Dr. Addington went out, found a policeman, and gave himself up: on the first examination, he was admitted to be his own bail in the sum of five hundred dollars.

In evidence of the truth of his statement, the prisoner exhibits his wounds; consisting of severe cuts on and about the head; contusions; and the mark of a human hand on the throat, in black and blue, where the blood had coagulated under severe pressure. The complainants also show many wounds with the cutting instrument used in the affray, those of Mr. Miller being in greater number, and of a more dangerous character than the others. The prisoner was found guilty on the first indictment.

On being asked the usual question, if he had "any thing to say why sentence should not be passed upon him," the prisoner made a lengthy and very telling speech, giving his statement of the facts of the occurrence, and asserting that what he had done he did in strict self-defence; he was not yet too old to learn, and he would thank his Honor to inform him how he could have acted otherwise, under the circumstances; if justice were done, the complainant in this case would be in his place at the bar.

The judge said that he was most unfortunate in having no witness to the affair, and as there was certainly a doubt in his mind, he should give the prisoner the full benefit of it, not trying him on the other two indictments, and letting him off with the lightest punishment the statute allowed for the offence—one year's imprisonment in the county prison.

Under the circumstances we certainly think the case could not have gone otherwise than it did, and we esteem Dr. Addington fortunate in receiving so light a punishment. If Dr. Addington was innocent, he certainly deserves commiseration for his misfortune; but, in the face of the evidence, the jury could not have found a lighter verdict.

The verdict rendered was, we understand, the result of a compromise.

REMOVAL OF THE SUPERIOR MAXILLARY AND OTHER BONES OF THE FACE.

By Hazard A. Potter, M. D., of Geneva, N. Y.

December 13th, 1862, I operated upon Mr. White, of Philadelphia, for the removal of the superior maxillary and other bones of the face. I was assisted in the operation by my friend Dr. Geo. N. Dox, of this place. As there are a few unusual facts connected with the case, I submit a report of the same for publication.

The patient had suffered, at times, most excruciating pain for five years, and demanded the operation from surgery as his last and only hope—preferring death to his unhappy condition. I commenced the operation by making an incision from near the inner angle of the left eye into the cavity of the nose, directly down to the angle of the mouth. All the bones of the nose had previously sloughed away, nasal, vomer, inferior and superior turbinated bones on both sides, and a portion of the ethmoid. The second step was to raise the free cut surface, pass the knife into the cavity of the nose, and separate the attachment of the upper lip to the gums, to the opposite angle of the mouth. The partially detached nose and lip were then lifted up and turned over upon the right cheek, when the whole cavity of the nose back to the throat was exposed. The adjacent parts were now examined. All that portion of the superior maxillary bones forming the floor of the nose and roof of the mouth was rough, brittle, and of a dark color; in fact, this was the condition of all the diseased bones subsequently examined. The disease extended on the left side as far as the third or last molar tooth, and the teeth were only held in position by their connection with the gums; that portion of the alveoli into which the incisor teeth are implanted had previously come away by detached pieces. I removed all that portion of bone forming the roof of the mouth except the palatine bones, which were sound and well protected—a fortunate provision of nature to sustain the posterior arch and roof of the mouth. Having removed all the diseased portion upon the left side to the last molar tooth, I examined the antrums upon either side; I found it necessary to remove a part of the left antrum and a part of the left inferior orbital plate. The right antrum was sound, and was not disturbed. This completed the operation. It will be readily seen that the roof of the mouth anteriorly is without a bony support, and was not united with the cut surface of the upper lip. To insure a union of these parts I passed a suture a little below and to the left of the nostril, directly through the lip and soft floor into the mouth, and returned it from a proper point through the roof of the mouth and upper lip, coming out a little below and to the right of the right nostril. The two ends of the suture were now united and the parts brought in apposition, and I have been so fortunate as to secure a union.

The disease was of five years' standing, and was unlike any disease of the superior maxillary bones I have ever seen. I have operated four times for the removal of the superior maxillary bones, but on a smaller scale; and in all cases which have come under my notice the soft parts have been involved, except this last. The bones did not have the appearance of *osteo-sarcoma*, nor do I believe the disease malignant, but have hope of a radical cure. It is now three weeks since the operation, and the patient is doing as well as I can desire, and will probably return to his home in a few days.

During the whole operation, which occupied an hour and a half, I administered chloroform. Much blood of necessity passed into the throat, and was frequently removed, yet I have never seen a patient recover more favorably from its effects.

I was among the first, if not *the* first, to administer chloroform upon this continent, after Dr. Simpson of Edinburgh brought it to the notice of the profession as an anæsthetic agent. I have used it several hundred times since without the first unpleasant result, and I do not ask for a better anæsthetic; and although I am compelled to differ with many in the profession, for whose opinions I have the greatest respect, yet my long, frequent, and thorough experience forces me to cling to chloroform until I am obliged by facts coming under my own observation to cast it off.

January 3, 1863.

LITTLE THINGS.

By J. S. Latimer, D. D. S.

A Blow Up, and how it happened.—A tale with a moral came to my knowledge recently. Dr. L. was in haste to get two temporary plates vulcanized. The cases and warm water were introduced, and the heater set on the fire of a coal stove, to remain until 310° should be reached, when it was to be removed to a better regulated heat. The doctor had a patient in the chair, and went to work, leaving the wife to watch and ward. Eight to ten minutes later, 300° was not reached; but two or three minutes afterward the heat was more than 330°—*how* much more is not known. The lady applied her hand to the wrench, which served as a handle, and was about to raise the heater, when it exploded with a terrific report, blowing the stove in fragments and scattering the burning coals all over the floor. The cap of the heater was driven through the ceiling, and portions of the stove were driven into doors and walls of the room with considerable violence. Fortunately, the lady escaped with her life, though considerably cut about the face, and having her dress torn into fragments by the flying pieces. Curiously enough, one of the pieces passed into her mouth without wounding her lips, and, knocking the only tooth off from a small gold plate, buried it—the bicuspid—in the gum. Subsequent examination of the vulcanizer showed that the sheet-copper of which it was made was scarcely thicker than the gold plate on which lower dentures are set, and that the block-tin plug in the cap was not fused, but remained still in its place. The heater was purchased of Rubencame & Stockton, of Philadelphia; was marked with the name of E. A. L. Roberts, and resembled those usually made by him. The machine had been used about two years.

Moral.—*Get a safe machine, and then never set it in a stove. Cheap goods may be dear in the end.*

The above article we copy from the *Cosmos* for April. The *animus* of the writer is plainly shown, by his underhand insinuation against the manufacturer of the vulcanizer mentioned. The article is well entitled, and the "littleness" of the "thing" is only equalled by the littleness of the narrator. It is evident, as acknowledged in the article, that the accident was entirely due to the carelessness of the operator in allowing the vulcanizer to be placed upon a stove, without giving it his constant personal supervision while in this position. As no record was kept of the height of the thermometer after 330°, it may have risen to 500° for all anybody can tell. The vulcanizer had been in use two years, showing its entire capacity to perform all that ought to be required of it, when properly attended to. It is exceedingly dangerous to place a vulcanizer on a hot stove or on hot coals, as it is impossible for a thermometer to indicate heat so rapidly generated from the bottom.

We have taken some pains to inquire into the capacity and power of endurance of these vulcanizers, and it seems we are not the only ones who have been making similar investigations. Either the little author of "little things," or some of his little-witted friends, thought they had discovered a metallic mare's-nest in this vulcanizer, and sent the sanitary police to examine it. We guess they are sorry they spoke, as the result has only been to furnish the inventor with the best advertisement he could possibly have. We append the certificate furnished by the police, after subjecting the vulcanizer to the highest pressure their gauge would indicate. Not satisfied with the evidence afforded by this test, the examiners applied additional pressure, probably to an equal amount, the whole force being sufficient to explode the strongest steam-boiler ever made; yet this little machine bore it without flinching. We have seen it ourselves since the test was applied, and can bear witness that there is not a sign or an evidence of weakness in any portion of it. If this test is not sufficient to disprove the insinuations of the writer of "little things," we would like to have him invent some other.

CENTRAL DEPARTMENT OF THE METROPOLITAN POLICE.

300 Mulberry street,
New York, May 2d, 1863.

"This is to certify that on this 2d day of May, 1863, a copper vulcanizer of E. A. L. Roberts's Patent has been subjected to a hydrostatic pressure of *three hundred pounds to the square inch* (this being all our gauge would indicate), and is safe to sustain a working pressure of two hundred pounds of steam to the square inch.

"B. G. LORD,

"*Captain Sanitary Police.*

"N. B.—Equal to a temperature of three hundred and eighty-seven degrees."

NEW YORK DENTAL PROTECTIVE UNION.

A MEETING of this association took place at No. 781 Broadway, on Wednesday evening, February 4th, pursuant to call of the President. The Secretary announced that he had received numerous letters from members of the profession in the West, asking for the opinion of the "Union" in reference to the late decisions in the suits for infringement tried at Windsor, Vermont. He also presented two circulars issued by the American Hard Rubber Co. for circulation in the West, containing the decision, and threatening all infringers with immediate prosecution. On motion, a preamble and resolution were adopted, setting forth the opinion of the New York Dental Protective Union in the premises, to the effect that the cases having been appealed, they did not consider the decision as final, or that the relations previously existing between the profession and the American Hard Rubber Co. had been in any way altered by it. We give, on another page, the original preamble and resolution, which will no doubt interest the profession.

VULCANITE AND ITS VICTIMS.

WE had hoped that we should not be obliged to continue our reference to this subject. We had supposed that the *exposé* given in the NEW YORK DENTAL JOURNAL, together with the unanimous expression of sentiment at the Convention, at Trenton Falls, last year, would have given an effectual quietus to this many-lived animal. But the brazen effrontery of the supporters of the monstrous imposition to which we have so often alluded, has not been by any means squelched by any action that has yet taken place. We have kept a watchful eye upon the farce as it has progressed: our reporters have let no particle of evidence elude them, until we have gathered such a batch of information as would require many pages in the JOURNAL to produce it creditably; we shall continue to keep our eyes and ears open, and shall present the whole matter in our September number, unless the course of events should place the whole question in a position to be unworthy our further notice. While on the subject of patent rights, we may mention, as a peculiar coincidence, that the "head and front" of all "this offending;" the immaculate guardian of the rights (?) of his proprietors; he who has sold himself for a mess of pottage to a wealthy monopoly, to do the dirty work they would scorn to handle themselves,—to frighten men unlearned in the law into the belief that they are trampling on the rights and privileges of others, when in reality it is their own that are being ignored or set aside;—he who has held the stern rod of the law *in terrorem* over the backs of the profession, and thus scared them out of thousands of dollars, has at last come within its pale himself. We are credibly informed that this mammoth bugbear to all unhappy infringers on the vulcanite patent, has at last been caught in the meshes of the net he has so often spread for others. Not to put too fine a point upon it, he has been caught napping; he is, in fact, that apocryphal weasel who has at last been found enjoying an unwonted repose. We wish he may have pleasant dreams; but if the ghosts of the thousands of pounds of red vulcanite he has been the means of cramming into the mouths of unfortunate toothless individuals, for so many years, don't sit heavy on his stomach, and give him a vermilion-tinged India-rubber night-mare, we miss our calculations. This will be having dreams *couleur de rose.*

Although we are ourselves anti-patent, and opposed to all patents in the dental profession on principle, yet when we see a doctor persistent in giving useless and nauseating drugs to those who don't want them, and don't require them, we cannot help feeling an ineffable satisfaction if he is finally forced to swallow his own medicine. Such is the case in the present instance; our would-be doctor has so long been purging and vomiting the pockets of the dentist by his vulcanite pills, that not one in the profession will regret his being forced to take a bolus himself, in the shape of a suit for infringement on E. A. L. Roberts's patent for vulcanizers. We earnestly trust it may act as a strong cathartic, and effectually clean away this atrabilarious condition of mind under which he has been so long laboring. The unbounded impudence of stealing a man's invention and selling it at a higher price than the inventor does himself, as though it could possibly gain any thing in value by the transmission, is, to say the least, cool. However, there is little doubt but the course of treatment to which this fusible metal, red vulcanite,—pattern of a patent-sustainer,—is about to be subjected, will be such as to utterly eradicate every symptom of the disease, which has run so long in his system as to have become chronic. After making him swallow his own nasty red vulcanite pills, we trust a carefully-adjusted steam treatment in the new vulcanizer will extract all the mercury of infringement from his system, and render him for the future entirely harmless and innocuous to the dental profession: for though he does assert that mercury, when subjected to the influence of the vulcanizer, loses its poisonous properties, yet we prefer to have a dog muzzled to trusting to his having bad teeth. We intend to watch every symptom of the chronic disease of this old fox, and feel his pulse often, so that he may not play sick, and by some sleight of hand avoid the steam bath he is about to be plunged into. We intend to see it fairly administered; should it be otherwise, we shall inform our brethren of the profession of the manner he escapes.

PREAMBLE AND RESOLUTION OF THE NEW YORK DENTAL PROTECTIVE UNION.

Whereas, the defendants in the late suits brought at Windsor, Vt., against various parties for infringement on the patent of the American Hard Rubber Company on Vulcanite Rubber, have appealed the cases, and they must yet be finally decided by a higher court:

And whereas, the said Company, by flooding the country with circulars stating that this decision is final, have sought to frighten the profession into paying them the tribute thus far so justly withheld from them :

Resolved, That in the opinion of the "New York Dental Protective Union," the position of the Profession in reference to the American Hard Rubber Company still remains the same as before this decision.

What is a curious fact with regard to the circulars based upon the last decisions claimed by the American Hard Rubber Company, is that they have been circulated among the country dentists, and out West, where they would be most likely to have an effect before the facts could be known. We have heard of none of these documents circulating in New York or vicinity, where the Protective Union would be likely to see them. Also, we have been informed that agents are out in the West threatening prosecution to dentists. This may be true—we presume it is, judging from all their past acts in the case of the Roberts, Toland, and other decisions, which we took pains to give to our readers, accompanied with the facts in those cases; and which the profession must have seen differed somewhat from the statement made in their circulars, that they were final decisions. We shall keep watch of all decisions of this question, and shall keep the profession informed of their true character, as far as we are able to do so. Our own judgment in this whole matter is, to see first how the case now pending between the A. H. R. Co., and the New York Tooth Manufacturing Company terminates, as this is a suit to test the case in regard to dentists, and will be, in all probability, contested to the end. The Protective Union, we understand, intend to keep an eye on it.

AMERICAN DENTAL CONVENTION.

The Ninth Annual Session of this body will take place on Tuesday, August 4th, at Saratoga Springs, N. Y. The members of the profession from all parts of the country are cordially invited to be present. The executive committee, appointed by the president to prepare the order of business for 1863, reported the following subjects for discussion, which were adopted:—

I. Causes influencing an abnormal development of the teeth.
II. Treatment of dental irregularities, and appliances for the same.
III. 1. Filling Teeth. 2. Filling temporary teeth. 3. Best material for same.
IV. Diseases of the antrum, and treatment.
V. Treatment of cleft palate.
VI. Alveolar abscess.
VII. Mechanical dentistry.
VIII. Miscellaneous business.

W. H. Dwinelle,
W. A. Pease,
W. D. Stone, } *Committee.*
D. W. Perkins,
T. L. Buckingham,

Although this is technically termed the *American* Dental Convention, dentists from all parts of the world are always welcome, and invited to take part in the discussions.

W. B. Roberts, *Corresponding Secretary.*

DENTAL DEPOTS AND THEIR USES.

In old times, before dentistry had become, in this country, a scientific profession apart, the appliances and instruments necessary to the craft were either manufactured by operators themselves, to suit present necessities, or were rudely fabricated by the blacksmith or other artificer nearest at hand. By-and-by, as the demands of the profession became more onerous, some few imported instruments were for sale in the surgical-instrument shops, and some few others in drug-stores. But the unprecedented increase in the practice of this new art soon became such, that new and more convenient arrangements had to be made for its accommodation. Thence sprang up, or rather grew up, the Dental

Depot. The complete proportions since assumed by this business, render it one of very considerable importance. Every large city has its Dental Depot, from which are supplied not only the dentists of the immediate vicinity, but those far removed from the centres of our western civilization, and who are obliged to depend upon their more fortunate brethren for the necessities of their calling.

We are led to these remarks after an examination of the new establishment of Mr. A. Jones, who has just removed to spacious quarters in the new white marble building, No. 724 Broadway. Mr. Jones has been long and favorably known to the dental profession as a purveyor for their wants, and hardly needs any compliments from us at this late date; but on the occasion of his entering his new location, it does not seem amiss to say a pleasant word of one whom we have known and respected, both in his business and social capacities, for so many years. Mr. Jones's present apartment consists of one room, one hundred feet deep by twenty-five wide, tastefully and conveniently fitted up, and will be found stocked with every thing the wildest dental imagination can conceive of desiring.

We shall continue our Dental Depot at 691 Broadway, as usual, and we understand that all the others in this city will be found after the 1st of May at their old quarters. We know of no removals except that of Mr. Jones.—Eds.

EXCHANGES RECEIVED SINCE OUR LAST.

Proceedings of the N. Y. Academy of Medicine, 1862, July, Dec.
Deutsche Vierteljahrsschrift für Zahnheilkunde, April, Oct., July, 1862.
Medical News and Library, Aug., 1862, March, 1863.
American Dental Review, " " " "
Chicago Medical Journal, " " " "
Dental Register of the West, Sept., " Feb., "
Revue Odontotechnique, July, "
Dental Cosmos, Oct., " March, "

Cleaveland's Journal of Rational Medicine,	Sept.,	1862,	March,	1863.
Boston Medical and Surgical Journal,	Aug.,	"	"	"
American Medical Times,	"	"	"	"
People's Dental Journal,	Jan.,			"

Allport's Registering Dental Ledger.—A copy of the above useful work has been placed on our table, for which the publisher, Mr. S. S. White, has our acknowledgments. This work is elaborately gotten up, with diagrams and symbols denoting the locality of operations. We can recommend it as an important adjunct to the office of the dentist, and advise all our professional brethren to try it.

We will here notice the appearance of the "People's Dental Journal," at Chicago, published and edited by Dr. W. W. Allport and S. T. Creighton. This is a neat little octavo of twenty-four pages, and aspires to be rather a guide to the people than to dentists, in all matters concerning the proper care and regulation of the teeth. Such a periodical is much needed, and if the people can be induced to read it, will doubtless do very much good. The principal subjects treated in the first number are, "Causes of the Decay of the Teeth;" "Artificial Teeth;" in which article we are sorry to see the writer affects the common errors in regard to the *purity* of vulcanite base, and its general adaptability to use as a base for artificial teeth; "Hygienic and Therapeutic relations of good Teeth;" a very sound article on the importance of proper mastication and deglutition, etc. Several communicated articles, one particularly by "A Lady," are well worth examination. We wish our friend Allport's new work all success.

CLEAVELAND'S DENTISTS' MEMORANDUM,

A BOOK OF ENGAGEMENTS AND MANUAL OF READY REFERENCE FOR 1863.

The third annual edition of this valuable and useful work is published, and a copy now lies upon our table. Its importance as a work of reference for the dentist cannot be overrated. We have in previous years referred more particularly to its peculiarities.

We would suggest to Dr. Cleaveland that its earlier publication would be a desirable improvement. It should be for sale certainly as early as October, for the following year.

DEUTSCHE VIERTELJAHRSSCHRIFT FUER ZAHNHEILKUNDE.

This dental periodical is published at Vienna, by the extensive publishing house of Carl Gerold's Sohn. Nearly every number contains editorial notices of American dental periodicals, and digests of the proceedings of American dental societies. The number for April, 1862, contains a notice of the New York Dental Journal for 1861, for which the editors will receive our thanks. The "Vierteljahrsschrift" is handsomely printed, and is altogether as creditable an affair as any issued in the interests of the science of dentistry.

NITRATE OF SILVER IN STOPPING HEMORRHAGE AFTER EXTRACTION OF TEETH.

By Charles Ray, Esq.

[Every medical man knows the occasional trouble experienced in stopping hemorrhage after extracting a tooth. We give the following account of Mr. Ray's plan, in a case to which he was called.]

Upon placing the patient with a slight inclination backwards, she immediately choked, and it being night, and in the upper jaw near the throat, I had much trouble in obtaining a view of the situation of the hemorrhage, which flowed as freely, with the pressure of my finger in the socket, as with the addition of small pledgets of lint, steeped in a saturated solution of alum. After an ineffectual trial of these means, I took a tick of nitrate of silver, rounded at the extremity, and firmly forcing it to the bottom of the cavity, allowed it to remain a few seconds in this situation; very little pain was expressed, and, upon its withdrawal, I was gratified in finding a complete cessation of the hemorrhage. The mouth was kept open with a cork for about half an hour, to admit air freely, and insure the preservation of the clot, which might have been disturbed or removed by suction; she then took forty minims of opium and a teaspoonful of compound spirit of ammonia, and afterward rested five or six hours. With the exception of the unpleasant *cupreous* flavor communicated to all nourishment for the next few days, nothing was complained of but extreme exhaustion, which was many months in disappearing.—*Braithwaite's Retrospect*, vol. 3. p. 114.

DEFINITION OF DENTIST.

"*Dentist* is an artisan who confines himself to the extraction of teeth, and to several operations required by their defects, redundancies, accidents, or disorders. The word dentist is French, and the most popular practitioners in this department have come from France; so, likewise have the most ample and regular treatises on the subject, some of which are tediously prolix and frivolous. The head surgeons in London deem this branch of their art beneath notice, and generally decline interfering in it, except by giving their advice occasionally; though manual operation on the teeth, and the mechanical formation of these organs, in cases of defect, constitute a very profitable business in such a large metropolis; so that dentists are often known to get several thousand pounds per annum by their profession!"

The above definition of a dentist is taken from Rees' Encyclopedia, published in 1819. It will be seen that the science has somewhat advanced since those days; and also that the most popular practitioners do not now "come from France."

DENTAL INFORMATION FOR DRAFTED MEN.

Loss of teeth was a disqualifying effect very common among the French conscripts; they mutilated themselves by destroying the incisor teeth by acids, by extracting, or filing them down below the gum, a condition of parts which prevented the soldier from biting off the end of his cartridge, in loading his musket; so that it became necessary during examination to pass the finger along the jaw, previous to granting an exemption from service on account of loss of teeth. Some destroyed their teeth by caustics; and their loss followed the attempts made to simulate scurvy in one of its symptoms, sponginess of the gums. —*Gavin on Feigned Diseases*, p. 356.

ANCIENT CURES FOR THE TOOTHACHE.

"First purge the head with pilles of cochæ, and use gargaries, and if it do come of any cold cause, chew in the mouth divers times, the rote of horehound. And if it come by wormes, make a candell of waxe with henbane seeds, and light it, and let the perfume of the candell enter into the tooth, and gape over a dish of cold water, and then may you take the wormes out of the water, and kill them on your naile; the worme is little greater than the worme in a man's hand. And beware of pulling out any tooth; for pul out one, and pul out more. To mundify the teeth, washe them every morning with cold water, and a little roche alome."

"This method of curing the toothache has long been practiced in many parts of England. Some use cummin-seeds, some henbane, others aromatic herbs with a little salt, etc."—*The Breviarie of Healthe.* 1575.

ROSE-COLORED TEETH.

"Prof. Moritz Heider, of Vienna, relates that two girls (twins), who were placed under his care, had teeth of a peculiar rose-color. On the shedding of the first teeth, the permanent set also appeared of the same rose-red color, and only paled off after some years, never losing the reddish tint entirely. This appearance is difficult to account for, as no other member of the family shared the same peculiarity, nor was there any difference in the mode in which they were brought up."—*Med. News and Library*, *Feb.*, 1863.

INFANTS WITH TEETH AT BIRTH.

To the Editor of the American Medical Times:

SIR:—In the lying-in wards of Bellevue, there are now two infants under my care who were born with teeth, viz.: William Hoffman, sixth child; weight at birth, six and one-half pounds, puny, fully developed; right middle incisor in lower jaw, well formed and protruded, but placed athwart the jaw.

Annie Morse, first child, weighed at birth seven pounds; fully developed; two middle incisors in the lower jaw, both well formed but loose; right incisor set obliquely in the alveolar process.

Yours, etc.,

GEO. T. ELLIOT, JR.,

Physician to Bellevue Hospital.

18 West 29th st., Oct. 25th, 1862.

DENTAL CURIOSITIES.

THEY tell a tale of the old Countesse of Desmonds, who lived till she was seven-score yeares old, that she did dentise twice or thrice, casting her old teeth, and others comming in their place.—*Bacon's Nat. Hist.*, cent. 8, sec. 755.

The ashes of the ankle-bones of a female goat, while it is fresh and new, are counted an excellent dentifrice to whiten the teeth.—*Holland. Plinie*, vol. 2, fol. 327.

Take mastic and dragon's blood, of each a sufficient quantity: powder them, and mix them together, and let the patient use them as a dentifrice.—*Boyle's Receipts*, vol. 5, p. 376.

A kind of dentist restored my spirits by declaring that he was possessed of an art which would prevent all bad consequences, and continue the beauty of my pearly ornaments, set between rubies (for so he expressed himself), unsullied during my life.—*Knox's Works*, vol. 2, p. 573. *Winter Evenings, even.* 58.

When Xerxes fled from Greece, leaving his equipage and riches behind him, among other things was found a skull without any seam, consisting of one bone; also a jaw, and the upper jaw had teeth growing in a piece, all in one bone, both the front teeth and the grinders.—*Herodotus.*

DENTISTRY IN MADRID.

THE Authorities of Madrid have prohibited the drawing of teeth in the public streets, because it is derogatory to the dignity of the dentist's profession, and on account of its "staining the streets with blood."—*Lancet*, 1853, vol. 2, p. 68.

DEATHS FROM CHLOROFORM

THE following notice, characteristically French, is from the *Gazette Médicale de Lyon*, a journal long an advocate for the use of sulphuric ether.

"We are not wearied with reporting, any more than surgeons are with reproducing, the deadly action of an agent which was once called beneficent. A sense of duty and the hope of opening eyes so obstinately shut, stimulate us in an endeavor at which we work almost single-handed. If any thing could cool our ardor, it certainly would be the spectacle of the strange and growing apathy evinced by the authors and reporters of these surgical mishaps. We present our readers with a new and improved formula for these narratives, which, latterly and on too many occasions, have been multiplied in English surgery. 'A young girl, seventeen years old, was received at the hospital on the 23d of July last, and died on the 5th of August. She had received an injury by falling on an iron bar, and a short but painful operation was judged necessary. She consented to be put under the influence of chloroform, and as she was very nervous, great precautions were taken in its administration; but, in consequence of a feeble and fatty heart, which was not guarded against, she died a short time after the commencement of the inhalation of the anæsthetic.—(*British Med. Journal*, Aug. 16, 1862.)' Here, then, is a young girl of seventeen, who instead of being put to sleep, dies in a few minutes. Is any one disturbed by the event; is even any astonishment felt? Not the least! Her heart was 'feeble and fatty,' and they 'hadn't guarded against that.' This clears them all. Surgery is justified, and the operator passes on to the next."

In the *Medical Times and Gazette* of Nov. 1st, 1862, the full details are given of an inquest held upon the body of a man dead from chloroform. His thigh was to have been amputated, but whilst the operator was selecting his knife from a neighboring table his patient expired. The gentleman in whose hands this case occurred is spoken of as "one of the best surgeons in Gloucestershire," and it is clear that he used every precaution and care. After stating to the coroner that Dr. Snow's inhaler was used, in order to "reduce the *inevitable* risk of chloroform to a minimum," he says, "had it been possible to examine all the organs separately, before death, as I did after, I should have concluded that, of all patients I had ever seen, he was the very one who might fairly have been supposed to have taken chloroform with the greatest impunity." "That such a person should so have died, demonstrates that there are individuals in whom unconsciousness from chloroform is necessarily incompatible with life. At the same time a medical man is unable to select such from the general mass."

In the same Journal, three weeks later, Dr. Charles Kidd, best known for his persistent efforts to prove chloroform an absolutely innocuous agent, informs us that there have been "two deaths at one London hospital, within a few days, very recently, which were not noticed by the journals." We might add to these a fatal case occurring at Washington, within the last two months, in a Government hospital, of which no public mention has been made.

Is it strange, however, that incidents like these should be of frequent occurrence, when, in face of all the dangers admitted by the users of chloroform, the latest and most pretentious work on surgery published in England, devotes an article to the subject of anæsthetics, only alluding to sulphuric ether in a single line, which barely mentions its connection with their early history, and instead of sounding the alarm which is everywhere felt, fills up its pages with a consideration of certain laryngoscopic demonstrations of the phenomena of stertorous breathing, and hardly deigns to deal with so common-place or practical a matter as the method or means of inducing anæsthesia?

If the facts which already exist are faithfully collated by the Committee of the Royal Medico-Chirurgical Society, recently appointed to investigate deaths from chloroform, the hopes of our French contemporary can hardly fail to be encouraged, and the prejudices with which we in Boston have been charged, proved to be founded on no local or narrow-minded grounds.

Phosphate of Lime in Dentition.—In the course of a very interesting paper on the medicinal properties of the alkaline hypophosphites, Mr. John Taylor thus treats of their relation with dentition: "The impulsive demand for tribasic phosphate of lime in the construction of the teeth contributes to the disturbing influence called the fever of dentition; and this disturbance is often found to be most pyrexial in those children that have been ill fed, or that have been too long suckled, both instances showing the want of a due proportion of phosphates. In the robust there is sympathetic spinal irritation, tending to convulsion; in the feebie and cachectic sympathetic nausea and purging, wearing out existence. In both forms have I given hypophosphite of potash with marked success: in the first, or sthenic form, with solution of acetate of ammonia and sirup of rhubarb; in the latter, with acacia and some tonic or aromatic tincture. It is delightful to witness the consolatory effect upon a fractious, pseudo-inflammatory child, some cases of minor intensity being cured by the first effort, say eight grains of the hypophosphite in a two-ounce mixture. Those of the asthenic form had considerable dyspnœa, cough, pale dry skin, and a feeble pulse; some requiring ammonia as an adjunct; others not; but in all the impressive power of the hypophosphite, with its appropriate adjunct, was most satisfactory—frequently but simple sirup or mucilage sufficed."

W. B. ROBERTS,

TEETH MANUFACTORY AND DENTAL DEPOT,

691 Broadway, New York,

Having purchased the entire establishment heretofore known as Crowell's Teeth Manufactory, I have spared no pains or expense in adding new moulds of the most approved styles and shapes for the Vulcanite, Continuous Gum, and all kinds of mineral teeth required by the Dental Profession. I am now prepared to furnish, at wholesale or retail, an article equal in strength, shade, and natural appearance, to any in the market, at lower prices than can be had in the United States or Europe. Soliciting your patronage, I hope at least you will call and examine my goods before purchasing elsewhere.

W. B. Roberts.

LIST OF PRICES.

Block or section teeth for vulcanite base or cheoplastic work, with pins,	20 cents
do do do with holes	15 "
Single gum teeth for vulcanite or cheoplastic base work with pins	15 "
do do do plate work	15 "
Continuous gum teeth, with Roberts' one pin,	8 "
do do with two pins,	8 "
Plain teeth for vulcanite or cheoplastic base,	8 "
do for plate work	8 "

A discount of 20 per cent. will be made on all bills for teeth amounting to $50 and upward, and 25 per cent. on all bills of $100 or more, thus enabling dentists who wish to buy at wholesale, to save, at the above prices, about fifty per cent. upon the prices charged by other establishments. I am induced to offer teeth on such liberal terms to my professional brethren, because I am well aware that all money earned by the dentist is from his own personal labor, and a dollar saved by the purchase of teeth, is easier made than to fill teeth for it, and might as well be placed to his credit as go to enrich the already rich manufacturers. Very few dentists who make mechanical work, use less than from fifty to five hundred dollars' worth of teeth in a year, which, by

judicious purchases, would, in a few years, amass quite a fortune for the hard-working dentist.

Roberts' Material for Continuous Gum Work.

Platina, best French,	at the lowest market price.
Pure Gold, per dwt.	1 10
Gum Enamel, per oz.,	2 00
Body, per oz.,	1 00
Etching Enamel, per box,	1 00
Continuous-Gum Carvers, each	0 15

Roberts' Continuous Gum Furnaces.

No. 1, Large Size, with three muffles and three slides included,	$21 62
Cartage and boxing,	1 75
No. 2, with three muffles and three slides included,	19 44
Cartage and boxing,	1 50
Tongs for furnace, per pair	1 00

Vulcanizers.

Whitney's No. 1 Flask Lamp, &c., complete for use,	$12 00
" No. 2–2 " " " "	13 00
" No. 3–3 " " " "	14 00
Boxing and shipping,	00 25
Hay's, Dr. J., Dry Heater, for 1 case, complete,	10 00
" " " 2 cases, "	12 00
" " " 3 " "	13 00
Roberts' No. 1 Pice, all complete for use,	9 00
" No. 2 " " "	11 00
" No. 3 " " "	13 00
Rubber Base, per lb.,	3 00
Gutta Percha, for impressions, per lb.,	2 00

Files, Scrapers, Flasks, and all articles for the Rubber Base.

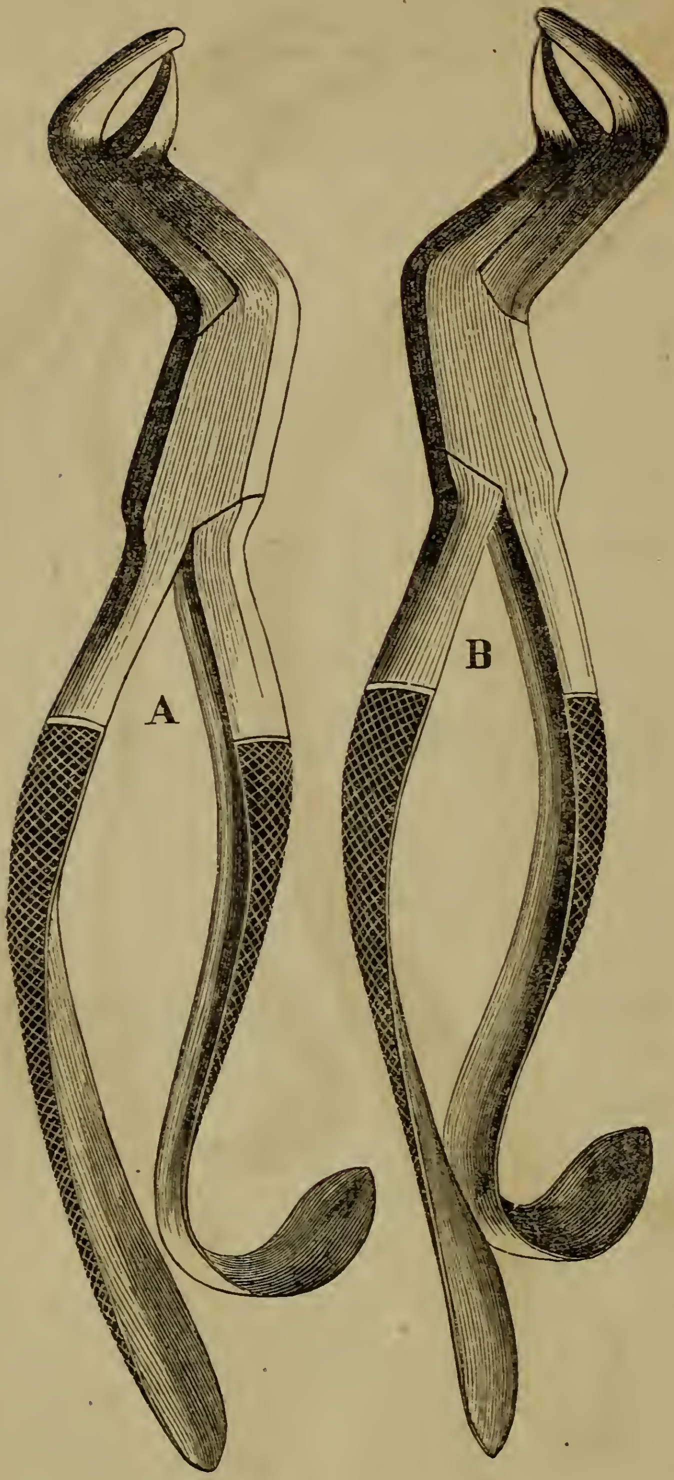
Metals and Minerals.

Gold plate, 18 carats, per dwt.	$0 90
" for clasps, "	0 90
Gold solder, per dwt.,	0 90
Pure Gold, "	1 10
Platina, best French, per oz.	7 50
Silver Plate, per oz.,	2 00
Silver Solder, per dwt.,	0 09
Silver Precipitate, per oz.,	2 00
Townsend's Amalgam, "	1 00
Berhard's, per oz.,	1 50
Bismuth,	1 50
Asbestus, per lb.,	0 38

Tin, lead, zinc, and all other metal at the lowest market prices.

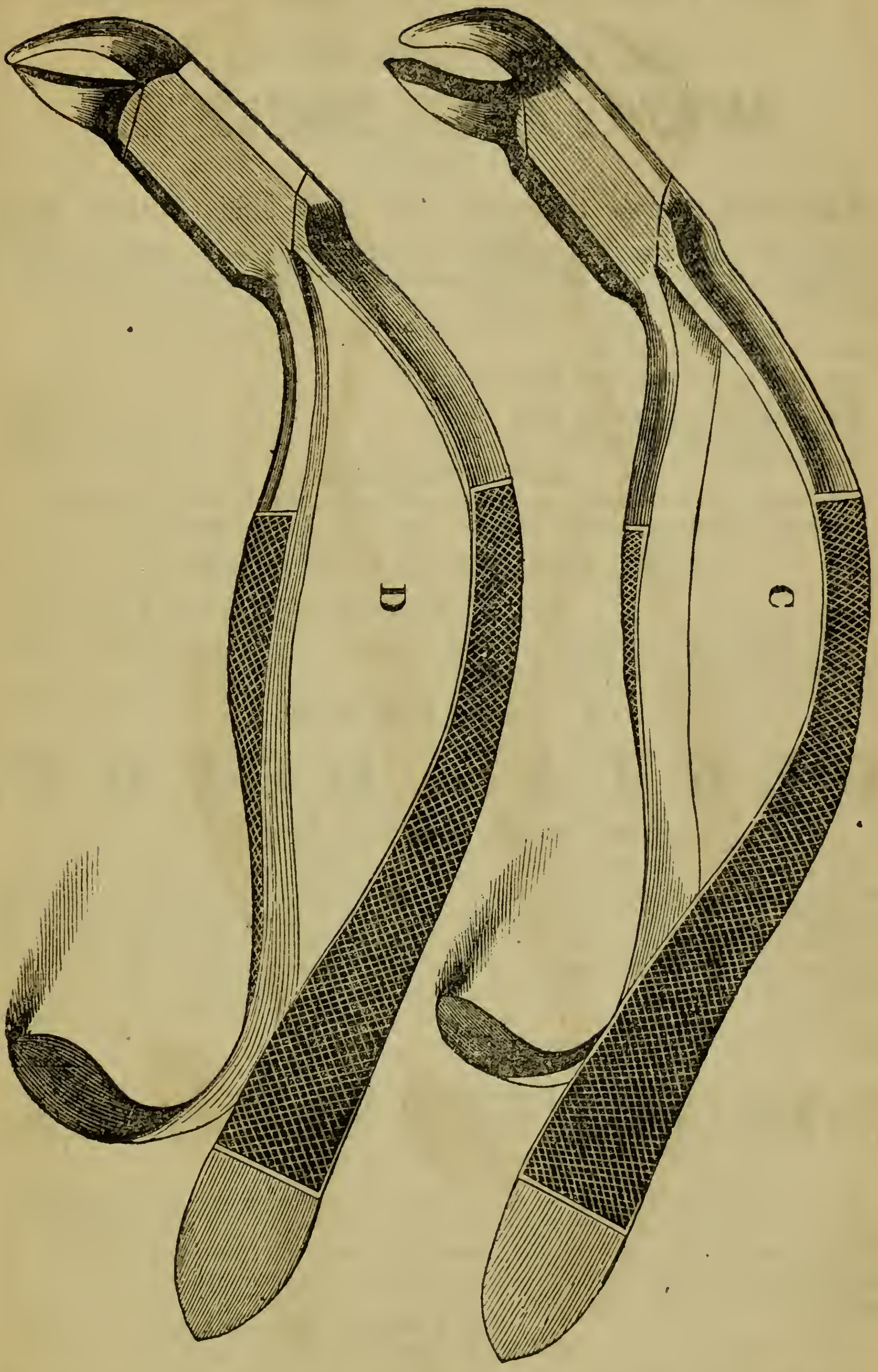
Sundry Articles.

Corundum Wheels,	from $0 10 to	$0 75
Circular Brushes,	from 0 15 to	0 50
Rouge, per package,		0 25
Plate Shears,	from 0 75 to	2 50
Scrapers and Gravers, each,		0 25
Impression Cups, each,		0 38
Horn Hammers,		0 50
Hawes' Flask,		1 50
Hair Brushes,	from 0 6 to	0 75
Melting Ladles, different sizes,	from 0 25 to	0 40
Bone Filling, Roberts', per box,		1 00
" " Dieffenbach's, "		1 00
Plaster Paris, per quart,		0 6



The above cut represents Dr. W. B. Roberts' Improved Wisdom Teeth Forceps. Price, per pair, - - - - - - - - - $2 50

Can be had at our Dental Depot, 691 Broadway, New York.



The above cut represents Dr. W. B. Roberts' Improved lower Molar and Bi-cuspid Forceps. Price per pair, - - - - - - $2 25

Can be had at our Depot, 691 Broadway.

TO THE DENTAL PROFESSION.

DR. G. DIEFFENBACH'S

IMPROVED AMBER COMPOSITION,

AND

Gum-Color Pink Vulcanite, and Best India-Rubber Gum.

Any Dentist wishing to give them a trial, by applying to me, either by mail or otherwise, will receive the necessary instructions to manipulate them, and a small piece of either Compound.

In order to induce a larger sale, and to bring them within the reach of all, I have reduced the price as follows:—

Improved Amber Compound, per lb.	$8 00
Pink Vulcanite	5 00
Best Prepared India Rubber Gum	2 50
Gutta Percha for Impressions	2 00
Dentine per oz.	3 00

Also One Dollar Packages.

Allowing 25 per cent. commission to the Trade, and to all orders above 5 pounds.

All letters of inquiry must be prepaid, and a return stamp enclosed.

GEO. DIEFFENBACH & BRO.,
No. 83 Bleecker Street, New York.

P. S.—Time of Vulcanizing: Amber and Pink Vulcanite, 2½ hours, at 330°; India-Rubber Gum, ¾ of an hour, at 330°.

A. JONES,

DENTAL DEPOT,

Removed to 724 Broadway, New York.

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Vulcanizing Apparatus.

THE attention of the profession is respectfully invited to the improvement over all other vulcanizers comprised in the above machine, and also to its great convenience, and adaptability to the necessities of those who desire to do artificial work. The peculiarities of this vulcanizer and its great merits consist in compactness, lightness, strength, and capacity.

It is so constructed that two cases may be vulcanized in it in about two hours, with the most satisfactory results; while, from the peculiar construction of the burner, it is impossible that a sufficient amount of heat should be generated to produce an explosion. Its principal beauty is its simplicity; it is so little complicated that the operator, by correctly following the directions, may leave his case without further attention, satisfied that at the expiration of a certain period of time he can return and find it properly vulcanized.

A great improvement which will be found in connection with this vulcanizer, is my new style of flask. As the top of this flask is cast to the rim, it is rendered much stronger than if they were separate; and as it is fastened by three screws, placed in the form of a triangle, it will be found easy to get just three times as much power as with the old thumb-screw; by these means, also, the flask can be always kept in its place, preserving the articulation, and always securing for the operator a plate of equal thickness, no matter how unequally the rubber may be placed.

This flask is more easily packed than our old pattern; less likely to get out of order; and will contain the largest possible set of teeth, while it occupies the least space.

For strength, durability, and convenience, this flask will be found to be the best ever offered to the profession.

The alcohol reservoir and burner attached to this vulcanizer, have also new and peculiar merits.

By an extinguisher attached to the burner, the amount of heat can be so regulated as to insure absolute safety and perfection in the work. A little arrangement of measuring-cups goes with the machine, consisting of four; the larger, if filled with alcohol, and that emptied into the reservoir, and the second size filled and emptied into the burner, will keep the vulcanizer going long enough to vulcanize the two cases. If this should not prove to complete their vulcanizing, fill the third size, which represents 20 minutes, or the fourth size, representing 15 minutes, and

pour upon the burner. If but one case is vulcanizing, the space of the second must be filled up with water, as there must always be the same amount of matter in the vulcanizer.

This vulcanizer, flask, and alcohol-burner combined, comprise the most perfect apparatus of the kind ever offered to the profession. I desire to call particular attention to the strength of the machine, as attested to in the official certificate appended to this advertisement. After bearing a pressure of three hundred pounds to the square inch (that being all the gauge would indicate), the combined weight of two heavy men was brought to bear upon it without effect; not a screw started; indeed there is no doubt but it would bear without injury any pressure possible to be applied to it. The cover of this machine is fastened by four screw-bolts, secured with strong nuts; the packing is contained in a groove turned in the cover, rendering it absolutely tight and impossible to blow out; while no vapor or odor can escape from it, and it is not disagreeable while vulcanizing, whether in the laboratory or parlor.

When it is considered that less than two ounces of alcohol will vulcanize either one or two pieces, at a cost of one cent and a half; that there is no danger of explosion, and that the result produced is absolutely the very best that can be produced, and that without any care or attention after starting it, the profession must admit that I offer great inducements for purchasing. I am now manufacturing these machines, and am able to offer them to the profession, including stove, cylinder, alcohol-burner, thermometer, vulcanizer, wrench, two ordinary sized iron flasks, and one very large one for extremely large cases; the whole neatly packed in a box 6 x 8 inches in dimension, and shipped to any part of the world for TWELVE DOLLARS ($12). Terms, Cash with orders, in Greenbacks.

The following cuts give an accurate representation of this apparatus.

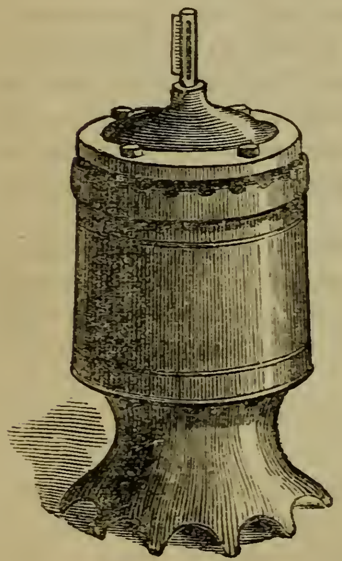

Fig. 1.

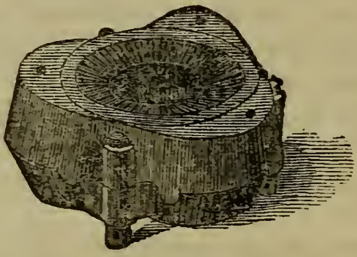

Fig. 2.

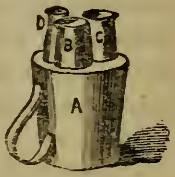

Fig. 4.

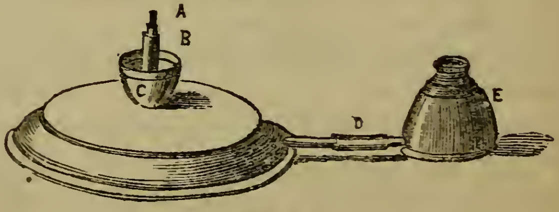

Fig. 3.

Fig. 1 represents the Vulcanizer. Fig. 2, my new improved Flask. Fig. 3, my improved Lamp, Reservoir, and Alcohol-Burner, in which A is the wire-gauze wick;

B, the extinguisher; C, the cup of the burner; D, the supply-pipe (rubber); E, the reservoir. Fig. 4 is the Measuring Cup: A, being the measure for the reservoir; B, the 30 minute measure for the burner; C, the 20 minute measure; D, the 15 minute measure; the uses of which have been already explained. I may here mention that I am manufacturing my new improved flask in brass, and can supply them at $1 each.

(I would state that my Mercurial Thermometer, furnished with this vulcanizer, is also made on a new principle. By not allowing the steam to fall directly upon the bulb, while it receives the full influence of the heat, I avoid much of the danger of breakage. My thermometer is small, strong, and can be carried in the vest-pocket, or sent in a letter without danger of breaking.)

Directions for Using my Vulcanizer.

Before attempting to vulcanize a piece, it is necessary to gauge the extinguisher (B, Fig. 3) attached to the burner. In order to do this, fill the vulcanizer with water to within half an inch of the top; place the cover on the machine as the marks indicate, and screw down the bolts equally, until there can be no leakage. Now fill the measuring cup (A, Fig. 4) with alcohol, and pour it into the reservoir (E, Fig. 3); next fill the measuring-cup (B, Fig. 4) with alcohol, and pour it into the cup of the burner (C, Fig. 3); light the burner, place the vulcanizer over it, and let it heat up; as soon as the thermometer shall indicate the highest temperature at which your piece is to be vulcanized, regulate your extinguisher by raising or lowering it until the thermometer shall have stood steadily at that point at least thirty minutes. To regulate the extinguisher, remove the vulcanizer and use a pair of pliers; if necessary, the wick can be trimmed with shears.

Now blow out the light and cool off the machine; empty the water out of the vulcanizer, and the alcohol from the reservoir and burner; put in your pieces, refill the vulcanizer with water to within half an inch of the top; put your fresh alcohol in the reservoir and burner as directed above, and the machine is ready for vulcanizing. Always be careful to follow the directions in screwing on the cover. It is only necessary to regulate the extinguisher when a new machine is first used, when some accidental displacement occurs, or when the alcohol varies at least ten per cent. in quality from that last used.

By strictly following the above directions full confidence may be felt in this vulcanizer; and the operator, after setting it to work, can leave it to perform its allotted task, knowing that when the alcohol in the burner and in the reservoir is burned out, his piece will be found perfectly vulcanized.

NOTICE.

In 1858, I made the first one-chambered vulcanizer, cast in one continuous piece of metal, ever manufactured. My specification claims for "casting or forming a vulcanizing steam and water chamber, in one continuous piece of metal." My Patent for the above invention is dated May 10th, 1859.

In 1860 I applied for a patent for a small-sized one-chambered vulcanizer.

My specification for this invention claims "to vulcanize in the same chamber containing the water;" and also for the "use of a fusible metal plug and combination." Owing to the delays of the Patent Office, this Patent was not granted to me until January, 1863.

By my Patent of 1859, I can hold responsible the makers of all vulcanizing machines constructed in one continuous piece of metal, as infringers and trespassers upon my legal rights.

Under my Patent of 1863, I can hold responsible all persons who manufacture machines vulcanizing in the same chamber containing the water, and using my fusible metal plug and combination, either or both.

I therefore warn all manufacturers of vulcanizers to avoid infringing on these my patents, as I shall certainly resist them with the strict letter of the law.

The following is a correct copy of the certificate to the strength and endurance of my new vulcanizer.

Central Department of the Metropolitan Police,

300 Mulberry Street,

New York, May 2d, 1863.

"This is to certify that on this 2d day of May, 1863, a copper vulcanizer of E. A. L. Roberts's Patent has been subjected to a hydrostatic pressure of *three hundred pounds to the square inch* (this being all our gauge would indicate), and is safe to sustain a working pressure of two hundred pounds of steam to the square inch.

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"*Captain Sanitary Police.*

"N. B.—Equal to a temperature of three hundred and eighty-seven degrees."

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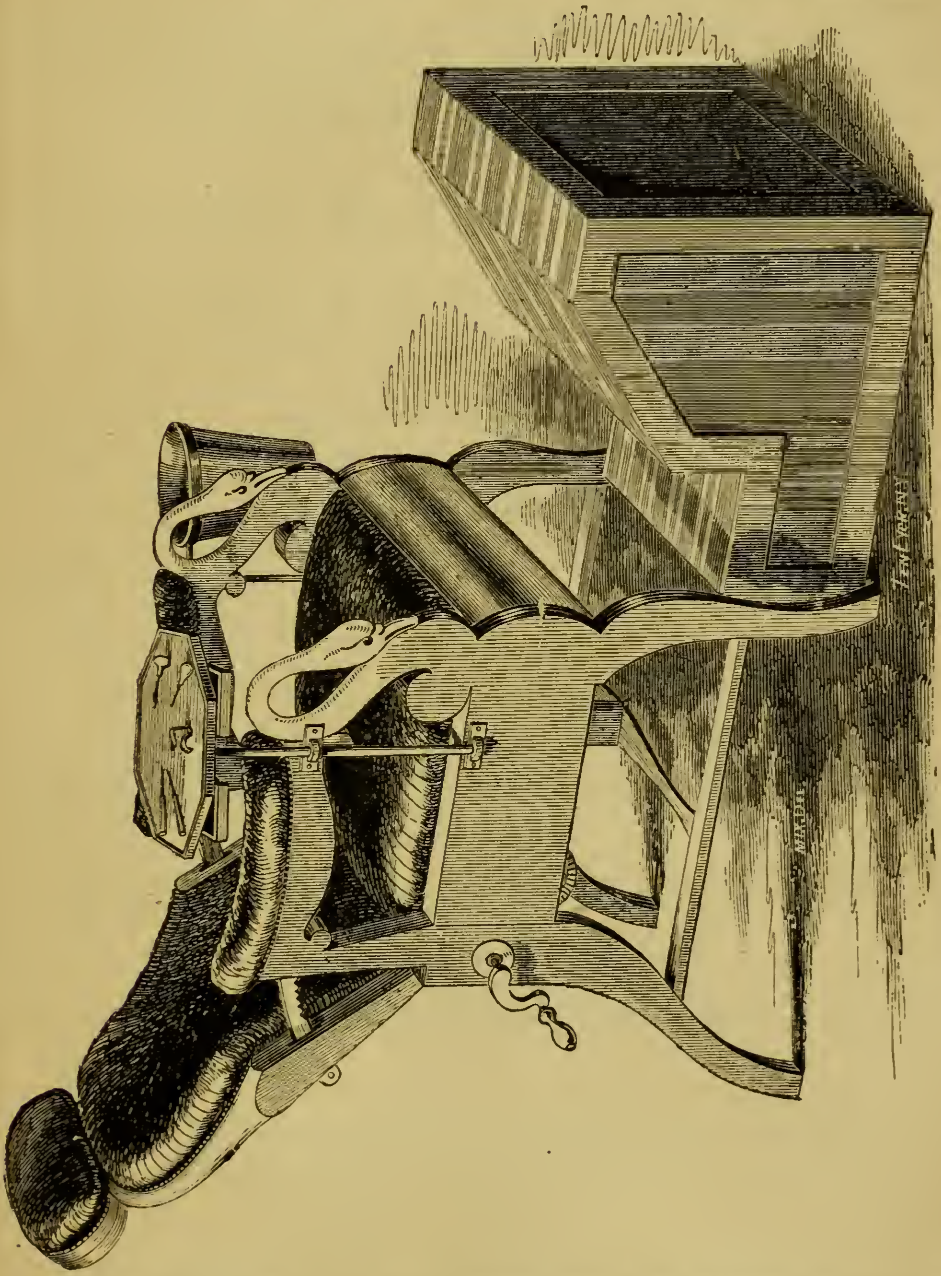

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NEW YORK:
W. B. ROBERTS, PUBLISHER AND PROPRIETOR,
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HISTORICAL SKETCH OF ALL ANÆSTHETIC AGENTS, FROM THE EARLIEST TIME TO THE PRESENT, INCLUDING THE NEW ANÆSTHETIC, NITROUS OXIDE GAS.

Anæsthetics is derived from the Greek, and means those agencies or powers which, applied to the systems of animated beings, produce, to a greater or less degree, a temporary cessation or suspension of nervous activity; or, in other words, which deprive the system of the ability to feel. As it is commonly supposed that such agencies are only the discovery of modern times, a few facts, giving some idea of their real antiquity, will not be out of place here.

Shakspeare refers to anæsthetic agents in "Romeo and Juliet," and in "Cymbelline;" and Middleton also speaks of them indirectly, in his play "*Women beware Women*," published in 1657. In one scene we find the following lines:

> "I'll imitate the pities of old surgeons
> To this lost limb—who, ere they show their art,
> Cast one asleep, then cut the diseased part."

In the *Mabinogeon*, a collection of antique Welsh tales, a case is related, where "Rhun set the maid of the wife of Elphin into a deep sleep with a powder put in her drink, and cut off her finger while in that condition, unknown to her."

In the sixteenth and seventeenth centuries, various authorities proposed to compress the vessels of the neck, until stupor and coma ensued, when painless operations could be performed; and in 1828, Dr. Hickman proposed the inhalation of carbonic acid gas for the same purpose.

On the road from Naples to Pozzuoli is a small cave, perforating one side of a hill to a short distance, and known by the name of *Grotto del Cane*, or the "Cave of dogs." This cave is situated near Lake Agnano, which is supposed to have at one time formed one of the craters to a volcano, now extinct. It is celebrated from the fact of its atmosphere being so strongly impregnated with carbonic acid gas as to render it destructive to animal life. Formerly the whole cave was filled with this gas, and was once used as a place of execution for Turkish captives, who were shut into it, and there perished miserably of suffocation. At present, however, the grotto contains less of the gas than formerly, and its specific gravity causing it to fall toward the floor, it is only dangerous within a foot of the ground. The cave is closed by a door, which is tended by a guide, who keeps a small dog for the purpose of experimenting and gratifying the curiosity of travellers; on thrusting the unhappy animal into the cave, he gasps, becomes asphyxiated, and presently, to all appearance, dead; he is withdrawn from the cave, plunged into the waters of Lake Agnano, and in ten minutes is as lively as ever. Pliny mentions this cave, and it has undoubtedly for ages continued to exist, a great natural *anæsthetic*.

Of course, the name of this natural curiosity is of modern origin, and derived from the melancholy connection with it of the canine race. We have no account of its having ever been used—except as an agent of death—until of late years; since we have, however, obtained proof of its anæsthetic properties by means of this modern custom, we cannot quarrel with it, although we may pity the dogs. Science has no feelings. Very few of the unscientific are aware how many substances possess this remarkable power, and how many influences there are which, properly directed, may be made to bring about this result.

195

Centuries ago, the priests of *Buddha*, in farther India, possessed this knowledge, and this power. Developing in various forms, the capacity to suppress sensation and animation has existed from the most distant periods: clouded with superstitions, now tinged with supernaturalism, now the instrument of the *Assassins* of Persia; the great weapon of the Rosicrucians, the secret of Cagliostro and of Mesmer; adopted by scientific minds and cast off by them; seized upon by far-seeing laymen, and given up by them from lack of success; produced in many ways,—by the incantations and jugglery of priests and doctors of all ages and countries; by simple and innocuous herbs, and equally by the most deadly poisons,—it has come down to us to-day the same principle as evolved in the application of ether and chloroform.

Now this may all be looked upon as a very harmless but very useless wandering from the subject, but we think that, by presenting to the reader a slight glance at these substances and these influences, it will be seen that in result they are all synonymous.

It is our purpose in this article to class together all those agencies, of whatever nature, which are known to produce, under certain circumstances and conditions, the phenomenon of temporary suspension of sensation.

Among these we combine, first, inanimate substances; and, next, intangible influences.

In the first class we find the following as possessing this power in some degree:

Opium.—This substance, the concrete juice of the white poppy, was used by the ancients as an anæsthetic; it is found in its best quality in Turkey and Asia Minor, although it is extensively cultivated in India. The Chinese smoke it to excess, and their forced importation of it produces an annual revenue to Great Britain of nearly £4,000,000. It will not be considered wonderful, therefore, that the British engaged in the great *Opium War*, rather than lose the benefits derived from its sale.

From opium we have the *laudanum* and *paregoric* of the pharmacopœia.

The mandrake (*Atropa Mandragora*) is a plant from whose root is obtained an anæsthetic agent. This root is found in many parts of the south of Europe, and particularly in the Grecian islands. It is a dark-colored fleshy mass, often forked, and resembling in form the human body; from this circumstance, and its known properties, it was considered by the ancients to possess supernatural powers, and was even reported to shriek when pulled from the ground;—it was therefore considered dangerous to disturb it. Even to-day, the young Greek wears small portions of it as a love-charm.

The effect of the mandrake upon the system is sedative, paralyzing the nerves of motion and sensation, thus acting as a true anæsthetic; its final effect is deadly, producing convulsions and death.

The first mention of any substance or compound being used for anæsthetic purposes was found by a French scholar, in a Chinese work upon the art of healing. This work proved that, 1,500 years ago, a preparation of hemp was used in China as an anæsthetic, where surgical operations were performed. Among the Hebrews and Egyptians, it was customary to give a preparation of hemp to a condemned prisoner, just previous to his execution; some of the Biblical commentaries assert that the gall and vinegar, mentioned in Scripture as having been given to Christ on a sponge, was in reality what the Prophet Amos calls "*wine of the condemned*," doubtless the *Bhang* of the Hindoo Suttee at the present day.

Homer speaks of the effects of the *Nepenthes*, of the Greeks, upon Ulysses and his companions, and they are identical with those of hemp.

The *Cannabis Sativa* or *Indica*, is a genus of plants yielding both the common hemp of commerce and the Hasheesh (Haschisch) of the Indian dreamer. This latter substance is a secretion of the plant, excessively narcotic in its effects, and is used by the East-Indian to produce an intoxication similar to that of opium. Its condition is a state of *coma*, before which the imagination is taken possession of and carried through exhilarating and delightful dreams, filled with the most beautiful and wonderful scenes and incidents the mind can conceive. The experiences of Bayard Taylor and others with this drug, prove its powerful qualities. This is undoubtedly an anæsthetic, although no record exists of its use in surgical or other operations except by the Chinese. The plant is a native of Persia, and grows wild in the gardens of all southern Asia.

All spirituous or alcoholic liquors are anæsthetic, when taken in sufficient quantities; and surgical operations have been performed on persons under the influence of liquor, without their knowledge.

Next to these, as possessing the anæsthetic power, we have the various ethers— *nitric*, *acetic*, *sulphuric*, etc., protoxide of nitrogen (laughing-gas), *aldehyde*, *olefiant gas*, *naphtha*, *carburetted hydrogen*, *Dutch liquid*, *benzoin*, *chloroform*, *amylene*, and *keroseline*. Anæsthesia has also been induced by local pressure, as first introduced by *Ambroise Paré*, and afterward somewhat used in English practice;—by the use of carbonic acid gas; and by actual freezing with ice and common salt, recommended by Dr. James Arnott, of London, and used to some extent in dental and surgical practice, both there and in this country.

The various ethers above mentioned, besides many others, are each produced by the distillation of alcohol with an acid; each of them, examined chemically, is found to contain a large proportion of *carbon*. Olefiant gas is a compound of carbon and hydrogen;—benzoin is a resinous juice which exudes from incisions made in a tree common in Siam and the Island of Sumatra; chemically analyzed, it is found to contain carbon;—naphtha, an oily liquid which occurs in springs, on the shores of the Caspian sea, in Italy and Sicily; it contains 83 per cent. of carbon;—aldehyde is obtained by depriving alcohol of its hydrogen, and contains 55 per cent. of carbon;—amylene is a compound of carbon and hydrogen in equal parts, and is obtained from fusil oil, oil of potatoes, etc., by distillation; it is considered more agreeable and less dangerous than chloroform:—finally, we come to the latest and most important of these substances—chloroform and sulphuric ether.

In 1831, Liebig in Germany, Soubeiran in France, and Guthrie in this country, all accidentally discovered chloroform; but it was not until four years later that its true composition was analyzed, and not for fifteen years was the world aware of what an important agent they had obtained. In the year 1849, Oct. 16, in the Mass. General Hospital, sulphuric ether was first publicly applied in surgical operation; it was completely successful, and a month later was patented by Dr. W. G. S. Morton, of Boston, under the name of "Letheon." In January of the following year a claim for the discovery was made by Dr. Chas. T. Jackson, of the same city, who asserted that he had suggested it to Dr. Morton. The question was argued with much bitterness; and while the public sentiment was in favor of Dr. Morton, the "Academy of Sciences in Paris" awarded the "Monthyon" prize of 2,500 francs to Dr. Jackson as the discoverer; and a prize of equal value to Dr. Morton, for first introducing it into practice as an anæsthetic. In 1852 a bill was introduced into the U. S. Senate, to purchase of Dr. Morton his patent for $100,000; this originated the famous 'Ether controversy,' which ensued in Boston between the contestants, to whom was now added a third, in the person of the widow of Dr. Horace Wells, who claimed in behalf of her deceased husband.

The final decision awarded the honor and profit to Dr. Morton. What is perhaps the most remarkable fact in this dispute, is that, after the matter was decided, Mrs. Wells, strong in her belief that her husband was entitled to the credit of the discovery, continued to push the case before the public and the medical profession by means of circulars and letters. At last, a committee was appointed by the "N. Y. State Medical Association," which rendered a report a few months since, giving all the credit to the late Dr. Horace Wells, whose claim, at the time of the former controversy, was not considered worth the trouble of examination. Whether this report will in any way revert to the benefit of Mrs. Wells, it is impossible to say; certainly, if her husband was in reality the discoverer of the anæsthetic properties of chloroform, he has been treated with the greatest possible injustice, and his memory should be honored by thousands whose lives have been saved by his means: that some reparation should be made to his widow in such a case is of course apparent to every one.

For ten years, chloroform has nearly superseded all other anæsthetics in medical and surgical practice, and usually with success, and without a greater proportion of casualties than would probably have resulted from the use of any similar substance known. The number of deaths attributed to the use of chloroform in this period has been computed as 125; but there is undoubtedly great injustice in charging chloroform with all of these catastrophes.

It is a fact well known among surgeons, that in the great operations of surgery, as hernia, amputation of the thigh, trephining, and others, a majority of cases will die under the knife, without the use of chloroform; that they die with that use, does not prove that the anæsthetic was the cause of death. On the contrary, taking the following statistics, it will be seen that chloroform has undoubtedly been the cause of saving a great many lives which without it would certainly have been lost. Taking amputation of the thigh, for example: out of 987 cases collected, 435 proved fatal, or about 44 in every hundred;—but out of 144 cases of the same operation, where chloroform was administered, only 27 proved fatal, or 25 in 100 died. It is estimated, therefore, that by the use of chloroform in amputation of the thigh, 19 cases are saved out of every 100, or 190 of every 1000: probably other operations would give a similar result, if examined.

But that death does ensue from the use of chloroform, cannot be denied, and therefore the greatest care should be used in its administration, to give the purest quality, only a sufficient amount, and never to give it at all, where the heart, brain, or lungs are known or suspected to be diseased. Where chloroform is given in such cases, and evil results follow, the following treatment will sometimes restore the patient, and should certainly be tried in all cases. 1st, remove from the vicinity all traces of the anæsthetic, and admit pure air; 2d, place the patient in a supine position; 3d, if the tongue has fallen back upon the wind-pipe, as is sometimes the case, pull it forward; 4th, attempt to produce artificial respirations, as in drowned persons:—in fact, the general treatment is the same as that used in suffocation by water, and if immediately, actively, and continuously used, will frequently restore. But, in the last two years, there has been a degree of public suspicion aroused against the use of chloroform, which, whether just or unjust, threatens to annihilate it altogether; even now, public institutions are considering the propriety of rejecting its use, and many prominent surgeons already refuse to administer it; many prefer ether or amylene, as less dangerous; and it is probable that any new agent of a similar character, but less dangerous, or with a better reputation for safety, would at once take its place. As will be seen in continuing this article, experiments are being made, and especially in France, which promise a speedy result of this nature.

We have thus named and described all the known substances which possess true anæsthetic powers: we come now to the *influences.*

Returning once more to the ancients, we are aware that ever since history began there have existed accounts, at first vague and traditionary, afterwards more purely historical, and finally reaching actual and *bona fide* occurrences related by eye-witnesses, tending toward proof of the existence of certain conditions, frequent or occasional, self-induced or induced by others, which are analogous to those produced by anæsthetic substances, in that suspension of sensation is one of their primal and most important phases. The agencies which have produced these conditions have been known at different periods by different names, given to them by various persons, whose connection with them has been extended and important,—or void of result and transitory, as the case might be. Of these names, the following are all we can at this moment remember:—Mesmerism, Biology, Electro-Biology, Psychology, Animal Magnetism, and Hypnotism. Of the conditions induced by them we have Trance, Somnambulism, and Clairvoyance.

We are perfectly well aware that the majority of people absolutely deny the existence of any of these agencies; that of those who admit their existence, very few know any thing of their actual effect upon the system; and fewer still admit their capacity to produce temporary suspension of sensation. It is with this last power that we have to do in discussing the subject before us.

Some time in the latter part of the eighteenth century, when the subjects of electricity, galvanism, and magnetism were beginning to occupy the minds of scientific men to a considerable extent, the question, as to the influence of magnetism upon human beings, was raised and seriously considered by many then engaged in these investigations. The first who conceived an idea of importance upon this question, seems to have been one Maximilian Hell, of Vienna; but his little advance into the subject was soon entirely overshadowed by the sudden appearance of one who was destined to give his name to what should be considered at once the wildest vagary, and the most remarkable scientific discovery of modern times. Dr. Frederick Anthony Mesmer, then residing in Vienna, was induced to turn his attention to the subject; and, after some private experiments, announced that he would cure all diseases by a new agent. As he was successful, he soon became famous, and of course the original discoverer at once put forth a claim to the honor and emolument resulting from the use of this new curative. Mesmer was compelled to leave Vienna, and proceeded to Paris, where he soon set up an establishment, announcing the wonderful discovery, now beginning to be known under the title of *Mesmerism.*

He soon became the most talked of man in Paris; his magnificent residence, surrounded with every decoration and ornament that unbounded means and unlimited extravagance could dictate, became the show-wonder of the world; all Paris, and indeed all Europe, was aghast with amazement at his reputed power. That he cured diseases was undoubted; *how* he did it, was another question; and this question the medical faculty, whose bread he was devouring remorselessly, determined to set at rest. A commission was appointed, of which, among other grave scientific men, Benjamin Franklin, then in Paris, formed no insignificant member. The commission met and reported; and the report was, that although certain influence was obtained by Mesmer's method, that influence must be referred to the imagination, and not to any new discovery. From this time Mesmer became virtually extinct as a public character, being considered by the majority of the public as a designing charlatan. But, although he was silenced, the newly-found agency was not, and soon the pupils of Mesmer again aroused public attention to its importance. Scientific men began to examine it; Deleuze, Von Esenbeck, Ennemoser, and Reichenbach were not as easily silenced; and in 1831, a commission, appointed by the Royal Academy of Medicine in Paris, decided unanimously in favor of the alleged power of Animal Magnetism.

It was found at first, that by the mere influence alone of this agency, certain diseases could be cured, in some cases instantaneously. These diseases were mostly derangement of the nervous or muscular system, including hysteria, tetanus, paralysis, etc. But the greatest importance of the discovery, as an aid to medicine and surgery, was as yet unknown.

A peculiar condition of the system while under its influence was at length observed, and it finally became known that, when in that condition, *sensation was suspended.* Here was anæsthesia;—and herein lies the analogy between animal magnetism and the substances which we mentioned before. But this use of the influence never became popular, even among its votaries; and all the experiments upon this condition which were made, were made in private, until late years. But not the less were they made; beginning with simple operations, as upon the teeth, they proceeded to those more difficult. Throwing the patient into the so-called mesmeric sleep, he passed through various stages into a totally insensible condition; in this state the severest operations were performed without the slightest sensation on the part of the patient; amputations of the most dangerous character were conducted in safety; in India, among the natives, English surgeons were enabled to experiment unrestrained; and undoubted evidence proves the success of this anæsthetic beyond all others. While complete insensibility was induced, the condition of the system as to general health was found to be more favorable; the duration of the state was longer without continued application; and the after state of health was greatly improved. Although little known, the use of animal magnetism as an anæsthetic has been for many years customary in France, England, Germany, and in this country; and the net result of success has proved far greater than with any other.

About the year 1840, Mr. Braid, of Manchester, England, discovered that he could produce insensibility by the use of an agency which he termed *hypnotism.* Mr. Braid succeeded in curing diseases, and in performing most of the experiments obtained from animal magnetism. But hypnotism never came generally into use; its peculiar character being in some respects more disagreeable than the mode of operating formerly practised. About a year since, however, in Paris, it received an unexpected and valuable adherent in the person of the great Velpeau, whose additions to surgical knowledge, both theoretical and practical, have been of the greatest importance to mankind. Dr. Velpeau has introduced hypnotism into his own practice in the hospitals of Paris, and before many years it will possibly take the place of all other anæsthetics. Mr. Braid's process is as follows : " Place a brilliant object in front of the medial line of the face, and below the root of the nose, distant from eight to fifteen inches ; direct the subject to fasten his eyes upon this object until a permanent contraction is perceptible in the ocular muscles,—in a few moments a singular state will supervene, analogous to catalepsy. The limbs in this condition will preserve whatever position is given them ; the senses, with the exception of sight, acquire at the same time exaggerated sensibility, until finally a condition of torpor or sleep results, which lasts an indefinite period ; the subject may however be awakened by light friction on the eyes, and by blowing upon the face ; in this state, surgical operations may be performed without the slightest pain."

In the *Dabistan*, or "School of Manners," a work written in 1650, or thereabouts, by a very learned Persian, and translated into English, will be found a description of the principal point of twelve religions of Persia. Among these, in the account of the *Parsees*, I find mention of a learned man of ancient times who had obtained such a power over himself, as to almost set nature and her laws at defiance. By some means, known only to a select few of his belief, he could throw himself into a deep sleep, and remain in it for a week at a time without injury to himself,—on the contrary, he lived to the age of 120 years.

Such cases are by no means rare ; instances are given, and especially one which we have in mind at this moment, testified to by the celebrated *Runjeeht Singh*, of the fakirs of India throwing themselves into such a sleep, and remaining therein for *weeks* and *months*. In the case we refer to, the fakir was sewed up in a bag, placed in a coffin which was sealed, that inclosed in a tomb, also sealed, and a guard placed night and day about the tomb for six weeks, when it was opened. Every thing was found in its original condition, and the man was taken from the coffin, and the bag ; he was attended to by a companion who always assisted him, and in half an hour was as well as ever. This experiment he repeated at various times and places, and before many English officers and persons connected with the East India Company ; and as to the truth of the facts, there can be no doubt whatever.

But these cases have not been confined to India, although it is only there that persons have been found who made a profession of this phenomenon, and a living by it. In England numerous cases have occurred, of persons being thrown into deep sleep and remaining in it for weeks and months; awaking suddenly, to be again plunged into a similar lethargic condition; and all *without the volition* of the subjects.

Now in all these cases, one peculiarity has been, *loss of sensation*—thus proving their blood-relationship to the substances and influences we have mentioned before, and also proving their anæsthetic properties.

In 1697, Samuel Chilton, of Bath, England, fell asleep, and remained in a trance or torpor for six months; during this period pins and needles were stuck in him; he was cut with knives, and every means was tried to see if he was sensible to pain; the result proved his entire insensibility.

We might add innumerable cases of involuntary protracted insensibility, but it is sufficient for our purpose to state the fact of their existence. They add one more to the various modes of inducing the anæsthetic condition.

We have thus endeavored to put together, in as readable shape as possible, our investigations into the history and mystery of anæsthetics. It will be seen that, except in the magnetic and hypnotic agencies, *carbonic acid gas* is the active principle of all these substances, and that this agency must therefore be the force which produces the condition. The effects of the fumes of charcoal upon the human system are well known: and the wonderful *Grotto del Cane* is perhaps the most powerful instance possible of the astonishing force of this gas.

FRANK H. NORTON.

NITROUS OXIDE GAS.

The foregoing article was written some two or three years ago, but never published. It will be observed that in one portion of it we say, speaking of Chloroform, that "*it is probable that any new agent of a similar character, but less dangerous, or with a better reputation for safety, would at once take its place.*"

The fact that such an agent has since come into use, and, especially within the past year, has been growing into favor with wonderful rapidity, gives the reason why we publish this article at the present time. The agent of which we speak is the "protoxide of nitrogen," "nitrous oxide," or "laughing gas," as it is variously termed. And its peculiar adaptation to the necessities of dentists, and the popularity it is rapidly gaining in the profession, render any apology for presenting the subject at this time unnecessary.

Nitrous Oxide was discovered by Dr. Priestley, in 1772, but was first accurately investigated by Sir Humphrey Davy, in 1799. It is procured from nitrate of ammonia, by subjecting the latter to the influence of a powerful heat in a glass retort, when the gas projects itself into the neck of the retort, and may be collected over water for common use, or over mercury for more careful experiment. The gas is nearly tasteless and free from odor; its purity is such, that, when properly made, a taper plunged into it will burn with great brilliancy, and if blown out may be lighted by it, if but a spark remains alive upon the wick.

Davy discovered its exhilarating qualities by experimenting upon himself and others.

Robert Southey, the poet, gives his sensations under the gas as follows:

"His first sensations were a fulness and dizziness in the head, such as to induce a fear of falling. This was succeeded by a laugh, which was involuntary, but highly pleasurable, accompanied with a peculiar thrilling in the extremities; a sensation perfectly new and delightful. For many hours after this experiment, he imagined that his taste and smell were more acute, and was certain that he felt unusually strong and cheerful. In a second experiment he felt pleasure still superior, and has since poetically remarked, that he supposed the atmosphere of the highest of all possible heavens to be composed of the gas."

Other prominent persons investigated the subject, and the universal verdict was one of entire satisfaction and delight with its action.

But the anæsthetic qualities of nitrous oxide had not yet been discovered.

It was chiefly used for purposes of amusement, or as effecting an interesting experiment, since its influence upon the human system was to draw forth expressions of whatever passion or quality might predominate, although its usual result was to produce simply great exhilaration, laughing, muscular action, etc.

Its anæsthetic properties appear to have been discovered by Dr. Horace Wells, quite accidentally. Dr. G. Q. Colton, whose popular experiments have since made his name familiar in all our principal cities, had at that time (1844) been exhibiting the effects of nitrous oxide for some years. At one of Dr. Colton's exhibitions, a gentleman, while under the influence of the gas, violently abraded his leg. Dr. Wells was present at the time, and observed that he did not seem to experience any pain from the wound: he questioned him in reference to it. The gentleman stated that he had felt no sensation whatever resulting from it. Dr. Wells at once remarked on the possibility of this gas possessing anæsthetic qualities, and announced his intention of testing the question. Accordingly, the following day, Dr. Colton accompanied Dr. Wells to the office of Dr. Riggs, a dentist in Hartford, where this incident occurred. Dr. Colton administered the gas to Dr. Wells, and while under its influence a molar tooth was extracted from his mouth by Dr. Riggs. On becoming conscious, Dr. Wells enthusiastically bore witness to the complete success of his theory, stating that he had experienced no more pain than would occur from the prick of a pin.

The use of nitrous oxide as an anæsthetic now became general in Hartford among the dentists, and so continued until the introduction of chloroform and sulphurous ether, in the latter part of 1846; but in Boston experiments attempted by Dr. Wells proved unsuccessful, and it did not there come into general practice. Superseded by these new, powerful, and more popular agents, nitrous oxide soon after nearly died out of use as an anæsthetic. But Dr. Colton continued to administer it to large audiences all over the country, under the name of "laughing gas," and always without disagreeable results. This state of things continued until as late as the spring of the present year, when, in consequence of the growing distrust of chloroform and ether, the idea of again taking up nitrous oxide was suggested by Dr. Colton to some of the dental profession, and it was accordingly applied in New Haven by Dr. C., and teeth were extracted there with remarkable and unfailing success.

It must be remembered that our knowledge of this agent, so far as its anæsthetic properties are concerned, is still in its infancy; and al-

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though our experience of its use, both from excellent external evidence and from many experiments made by ourselves, has left us with no instance of injury or dangerous or disagreeable result having occurred, yet it would not become us as public journalists to take a decided stand in its favor in this respect. Possessing as we do the belief, that all anæsthetic agencies derive their peculiar properties from one and the same cause, we must admit that what will injure or kill in one, will, under certain circumstances, have the same result in the other: and we do believe that this agent should be used cautiously, at least until we become better acquainted with all its qualities; and that if an impure article be given, or an over-dose, there would be good reason to anticipate disagreeable and perhaps dangerous results. We hold also to the opinion that in the simple operation of extracting teeth, the better way is to remove them without administering any anæsthetic whatever, provided the patient will submit to the pain of the operation, and bear it patiently. But there are many persons whose delicate nervous organizations will not admit of so painful and terrifying an operation without results injurious and sometimes dangerous to health; and in such cases as those, where the dentist considers an anæsthetic to be absolutely necessary, or where it may be obstinately demanded by the patient on his or her own responsibility, it is the duty of the profession to administer only, and always, that one which shall in the judgment of scientific minds have proven itself to be the *least* dangerous or injurious of any. And we may conscientiously state as our belief, that, as far as the evidence of experience can teach us, and as far as its past history gives promise for the future, nitrous oxide gas is the least dangerous and the least deleterious of any anæsthetic agent known, and may yet prove to be entirely safe and reliable.

Apart from its comparative safety, the peculiar advantages possessed by this anæsthetic over all others are, that it is inodorous, leaving no disagreeable taint in the atmosphere; that, if properly made by the dentist, he knows it to be perfectly pure; and that the condition effected by it is quicker in production and quicker in conclusion than with any other,—the latter quality as we think, adding greatly to its chances of safety. The chief objection against its use to be answered is, that it is somewhat troublesome to make, and that few among dentists understand the method of preparing it. In answer to this, we would say that after the first preparation, the apparatus is always at hand, and the manipulation perfectly simple; and any dentist can learn all that it is necessary to know about it, by applying to Dr. Colton; and the trifling expense incurred by this course will be amply repaid to him by the knowledge that he is going to work in the right manner.—Eds.

AMERICAN DENTAL CONVENTION.

NINTH ANNUAL SESSION.—*Aug. 4th–7th*, 1863.

First Day—Morning Session.

The convention was called to order by the Corresponding Secretary, Dr. W. B. Roberts, of New York, in the absence of the President and Vice-President, at 11 o'clock.

On motion of Dr. Robins, of N. J., Dr. Roberts was unanimously elected President *pro tem.*

The convention having come to order, the President requested the members to sign the Constitution and pay the annual dues. Drs. Buckingham and Robins reported the sum of one dollar as the individual assessment necessary to defray the expenses of the session. The following members signed their names to the Constitution and paid into the Treasury one dollar each:

Dr. B. T. Whitney	Buffalo, N. Y.
L. W. Rogers	Utica, "
Thomas D. Evans	" "
A. C. Hawes	New York city.
W. H. H. Atkinson	" " "
A. T. Smith	Syracuse, N. Y.
Wm. C. Parks	Williamsburgh, N. Y.
J. H. Smith	New York city.
T. Palmer	Fitchburg, Mass.
C. R. Butler	Cleveland, Ohio.
D. S. Goldey	Oswego, N. Y.
J. B. Williams	Monongahela city, Pa.
S. B. Palmer	Tully, N. Y.
W. W. Sheffield	New London, Conn.
S. Mapes	Fishkill Landing, N. Y.

Dr.	E. M. Skinner,	Syracuse, N. Y.
	H. H. Newton,	St. Johnsbury, Vt.
	J. Fiske,	Clinton, Mass.
	C. B. Foster,	Utica, N. Y.
	G. Watt,	Xenia, Ohio.
	W. L. Bowdoin,	Salem, Mass.
	J. L. Clark,	Waterloo, N. Y.
	S. L. Smith,	Ballston Spa, N. Y.
	C. H. Eccleston,	Utica, N. Y.
	A. N. Priest,	Albany, N. Y.
	J. A. Perkins,	Albany, N. Y.
	O. F. Harris,	Worcester, Mass.
	J. N. Scranton,	Bennington, Vt,
	W. W. Perkins,	Baldwinsville, N .Y
	J. G. Barber,	Le Roy, N. Y.
	H. Kinsley,	Middlebury, Vt.
	T. L. Buckingham,	Philadelphia, Pa.
	A. W. Kinsley,	Elizabeth, N. J.
	W. A. Bronson,	New York city.
	N. W. Kingsley,	" " "
	E. W. Sylvester,	Lyons, N. Y.
	F. O. Hyatt,	Cortland, N. Y.
	F. N. Seabury,	Providence, R. I.
	L. W. Bristol,	Lockport, N. Y.
	G. A. Young,	Concord, N. H.
	E. G. Cummings,	Concord, N. H.
	C. N. Pierce,	Philadelphia, Pa.
	H. Townsend,	" "
	H. Faville,	Milwaukie, Wis.
	A. M. Holmes,	Morrisville, N. Y.
	N. D. Ross,	Troy, N. Y.
	H. A. Smith,	Cincinnati, Ohio.
	C. Palmer,	Warren, Ohio.
	H. Benedict,	Detroit, Mich.
	J. A. Watling,	Ypsilanti, Mich.
	S. K. Thompson,	Poultney, Vt.
	J. Woolworth,	New Haven, Conn.
	S. D. Arnold,	Ballston Spa, N. Y.
	O. Lund,	Philadelphia, Pa.
	G. Chevalier,	New York city.
	E. Strong,	New Haven, Ct.
	C. L. Smith,	" " "
	B. S. Burnham,	Fort Edward, N. Y.
	S. M. Robinson,	Watertown, N. Y.
	W. B. Roberts,	New York city.
Mr.	F. H. Norton,	" " "
Dr.	R. M. Howard,	Knox Corners, N. Y.
	G. W. Ellis,	Philadelphia, Pa.
	A. Jones	New York city.
	J. C. Robins,	Jersey City, N. J.
	T. S. Scranton,	Madison, Ct.
	F. Searle,	Springfield, Mass.
	H. F. Bishop,	Worcester, Mass.
	Geo. Howell,	Riverhead, L. I.
	S. S. White,	Philadelphia, Pa.
	A. E. Lyman,	Newton Falls, Ohio.

Dr. B. Wood,	Albany, N. Y.
J. T. Metcalf,	New Haven, Ct.
G. L. Cooke,	Milford, Mass.
E. V. N. Harwood,	Rutland, Vt.
J. P. Beardsley,	Clinton, N. Y.
H. Jameson, Jr.,	Lyons, N. Y.
G. B. Snow,	Buffalo, N. Y.
A. Hill,	Norwalk, Ct.
E. L. Fuller,	Peekskill, N. Y.
T. G. Lewis,	Buffalo, "
M. Tefft,	Cambridge "
J. A. Chase,	Genesee, "
Wm. G. A. Bonwill,	Dover, Del.
G. W. Keely,	Oxford, Ohio.
E. A. L. Roberts,	New York city.
S. D. French,	Troy, N. Y.
L. C. Wheeler,	" "
S. J. Andres,	" "
L. D. Shepard,	Amherst, Mass.
J. B. Snow,	Bridgeport, Conn.
O. E. Hill,	Brooklyn, N. Y.
W. H. Jones,	Northampton, Mass.
I. Saft,	Cincinnati, Ohio.
J. Allen,	New York, N. Y.
P. Harris,	Skaneateles, N. Y.
J. A. Pelton,	Middletown, Conn.
H. A. Coe,	Theresa, N. Y.
W. H. Dwinelle,	New York.
G. W. Newton,	Worcester, Mass.
Geo. S. Allen,	Newburgh, N. Y.
H. M. Miller,	Westfield, Mass.

The Recording Secretary proceeded to read the minutes of the last meeting, which, after some slight corrections, were on motion received and adopted.

The President announced that he had received a letter from Dr. Amos Westcott, of Syracuse, the retiring President, regretting his inability to be present, and making certain communications to the Convention. On motion the letter was laid over, to be read in order in place of the retiring President's address.

The Treasurer, Dr. J. C. Robins, proceeded to read his annual report on the condition of the finances, showing as follows:

Receipts	$119.77
Expenditures	57.08
Balance in the Treasury	$62.69

On motion, the President appointed the following gentlemen the auditing committee: Drs. Whitney, Rogers, and Foster. The committee, after examining the accounts and vouchers, pronounced them correct. The report was accepted and the committee discharged.

On motion of Dr. Rogers, of Utica, Frank H. Norton, of New York, was appointed to report the proceedings of the Convention for the Daily Saratogian, at an expense of $15,00.

On motion, the daily sessions of the Convention were appointed to be from 9 A. M. to 1 1-2 P. M., and from 4 to 6 1-2 P. M.

On motion of Dr. Whituey, the Convention adopted for the present session the order of business and rules for discussion adopted at the last meeting, and announced in the following CALL:

THE NINTH Annual Session of this body will take place on TUESDAY, AUGUST 4th, at SARATOGA SPRINGS, N. Y. The members of the profession from all parts of the country are cordially invited to be present.

The executive committee, appointed by the President to prepare the order of business for 1863, reported the following subjects for discussion, which were adopted:

I. Causes influencing an abnormal development of the teeth.
II. Treatment of dental irregularities, and appliances for the same.
III. 1. Filling teeth. 2. Filling temporary teeth. 3. Best material for same.
IV. Diseases of the antrum, and treatment..
V. Treatment of cleft palate.
VI. Alveolar abscess.
VII. Mechanical Dentistry.
VIII. Miscellaneous business.

W. H. DWINELLE,
W. A. PEASE,
W. D. STONE, *Committee.*
D. W. PERKINS,
T. L. BUCKINGHAM,

Although this is technically termed the *American* Dental Convention, dentists from all parts of the world are always welcome, and invited to take part in the discussions.

W. B. ROBERTS, *Corresponding Secretary.*

The election of officers being next in order, the President appointed the following gentlemen tellers: Dr. Buckingham, Philadelphia; Dr. Kingsley, New York. The election of officers was then proceeded with, when the following gentlemen received the highest vote, and were declared duly elected, the elections being made unanimous.

President—Dr. J. TAFT, Cincinnati, Ohio.
Vice-President—Dr. W. W. SHEFFIELD, New London, Conn.
Corresponding Secretary—Dr. W. H. ATKINSON, New York, N. Y.
Recording Secretary—Dr. C. N. PIERCE, Philadelphia, Pa.
Treasurer—Dr. A. C. HAWES, New York, N. Y.

Adjourned.

Afternoon Session.

The Convention was called to order at 4 1-2 P. M. by the President *pro tem.* The President and Vice-President being absent, on motion, Dr. W. B. Roberts was requested to continue to act as President. The address of the retiring President being next in order, the President proceeded to read the communication from Dr. Westcott, which had been laid over from the morning session. It was of much interest, and received by the Convention with applause. As it was not intended for publication, we are unable to place it before our readers, which we regret, as we believe it would be appreciated by them.

After the reading was concluded, the newly-elected Corresponding Secretary, Recording Secretary, and Treasurer, took their seats. The first regular subject for discussion was next taken up:

"The causes influencing an abnormal development of the teeth."

Essays being next in order, Dr. Sylvester read a paper upon "Causes Influencing an Abnormal Development of the Teeth," in which he drew comparisons between the teeth of the aborigines and present inhabitants of our country. He believed decay the result of a violation of nature's laws, and traced it to one or more of the following causes: 1. Parental influence. 2. Gestatory influence. 3. Improper diet. 4. Impure air. 5. Want of exercise.

Dr. Searle would like to know when the results of parental influence were first manifested, and how we could account for the origin of the first case?

Dr. J. A. Perkins had never seen a case of marked irregularity in temporary teeth, and thought them very rare.

Dr. Atkinson said we were in deep water, and thought but little could be done to elucidate the subject until it was taken from the basis and treated serially, gradually arriving at the highest type. He referred to the importance of proper nourishment for children, particularly a free exhibition of food containing the phosphates.

Dr. Burnham directed attention to the great effect of hereditary influence.

Dr. Hawes thought that a deformity of one-half of the arch of a child, in conformity with one parent, and the other side perfect, in resemblance of the other parent, was a new idea; although he had seen such cases of irregularity, he had never thought of tracing them to such a combination of causes.

Dr. Buckingham had seen such cases as those just referred to, and would be unable to suggest any remedy until empowered with the regulation of marriages, so as to bring together only persons of perfect physical development, and thus regulate the formation of structure. He believed that defective teeth were oftener the result of *over* than of under feeding; he favored the use of food containing the phosphates, as insuring the production of dense and durable teeth.

Dr. Searle said that we were ignorant of the cause or causes of irregularity, and thought it was generally the result of circumstances purely accidental. He mentioned, in illustration, a case in which the lower teeth of the left side articulated entirely outside of the upper ones; this was occasioned by the malpresentation and neglect of a single tooth, whose early correction might have prevented the occurrence of the deformity. He thought the only remedy was close attention on the part of the dentist, who should frequently see his cases, and combat these accidents as they may arise.

Dr. Whitney thought the mixture of races was a fruitful source of irregularity, and referred to the most prominent peculiarities of facial and dental organism in the Germans and Irish, and the medium between the two produced by intermarriage.

Dr. Perkins thought that the sour acorn eaten by the Digger Indians was probably a cause of their deformed teeth.

Dr. Watt said that defective structure resulted from tissue defective in quantity or quality. Although it may be impossible to entirely counteract hereditary tendencies, much may be done to cultivate a better condition, and thus partially avoid their influences. He believed that a deficiency of phosphates in the mother's milk, from defective food furnished that parent, was a fruitful cause of imperfect dental development; to obviate such results, he would exhibit them to the mother either in food or as the phosphate of lime; he was aware that the insolubility of the latter substance might be urged as an objection to its administration. He had, however, fed a dog for thirty-six hours upon this substance alone, and upon opening the animal, at the expiration of that time, found it all dissolved; he consequently believed it less insoluble than generally stated. He mentioned the case of a woman whose children's teeth *all* decayed upon eruption; he prescribed the free use of phosphate of lime for one year; his directions were implicitly obeyed with the most gratifying result, those who were born during the treatment being blessed with finely developed dentures. Upon its omission, during a subsequent pregnancy, the old difficulty recurred in that child; its resumption, however, at a later term, was followed by the previous beneficial effects.

Doctor Williams remarked that one other cause of abnormal development, which had not been mentioned, was the injurious effect of the breath of the mother in nursing. At each expiration of the nurse, carbonic acid gas is thrown down upon the child, depriving it of the oxygen of the pure air, causing it to become restless and fretful, pale and sickly. Mothers, though unconscious of the fact, destroy their own offspring, and thousands die from this very cause. He thought that the cause of humanity demanded more attention than has yet been given to this subject.

Dr. Ellis said that, in addition to the deleterious influences already referred to, there was still another in relation to atmospheric air,—not its impurity, but its introduction into the lungs through an improper channel, the mouth. His attention was first directed to the subject through the perusal of a very interesting work from the pen of Mr. Geo. Catlin, in which, through many well-sustained and reasonable arguments, he endeavors to prove the baneful effects of the pernicious habit of "breathing through the mouth." His statements, which are based upon the results of long and careful investigation, deserve the attention and consideration of the profession.

Dr. Pierce dwelt upon the influence of measles, and other infantile diseases, in causing an abnormal and defective tooth stucture; their effects being frequently demonstrated upon particular teeth then in progress of development. Disease of the mother during pregnancy would, he believed, so unfavorably impress the fœtus as to occasion an imperfect formation of tooth tissue.

Upon motion, adjourned.

Second Day.—*Morning Session.*

The Convention was called to order at nine o'clock, by the President *pro tem.*, Dr. W. B. Roberts, who introduced the Vice-President elect, Dr. Sheffield, to the chair.

The minutes of the previous meeting were read and adopted.

Dr. W. B. Roberts offered the following:—

Resolved, That the Chair appoint a committee of five, to make proper arrangements for observing the Day of Thanksgiving appointed by the President of the United States. Carried.

In accordance with this resolution, the Chair appointed Drs. W. B. Roberts, Rogers, Kingsley, Watt, and Atkinson.

The Committee on the introduction of Dentists into the Medical Staff of the United States Army reported progress. On motion of Dr. Buckingham, the Committee was discharged and a new one appointed, consisting of the following gentlemen, who were instructed to co-operate with the Committee from the American Dental Association:—T. L. Buckingham, Phila.; G. Watt, Ohio; B. T. Whitney, Buffalo.

The second subject of discussion, "Treatment of Dental Irregularities, and Appliances for the same," was declared in order.

Dr. N. W. Kingsley said that he deprecated the use of complicated apparatus, which necessitated a foolish and unprofitable waste of time, labor, and expense. To give a general idea of his method of correcting irregularities, he imagined two cases: one in which an upper central incisor stood within the arch, and another in which two central incisors, upper, required turning upon their axes. In the former case, he would fasten a gum-elastic strip around the tooth, fastening it to the wire band, the contraction of which strip would draw the tooth directly into place; in the latter case, he would also use the gold band and gum-elastic strips, when tied, so as to give a rotary movement to the tooth.

Dr. W. B. Roberts thought Dr. Kingsley's method a very good one; he had himself been in the habit of using a band in place of the wire, and punching a hole opposite the irregular tooth and fastening several small pins on the outside, when the ligature, by being drawn through the hole and looped over the pins, could be conveniently lengthened or shortened. The band was easily fastened by bending the ends around the teeth.

Dr. T. Palmer strikes up a gold or platina plate covering the roof of the mouth, and allows the teeth to project through, thus leaving a band upon the outside; he makes his attachments to this plate: any difficulty from its riding up may be obviated by permitting it to cover a molar tooth.

Dr. J. A. Perkins described a case which he had successfully treated. Dr. Eccleston also described a case in which he had obtained a sucessful result.

Dr. Ellis said that in the first case described by Dr. Kingsley, he would adopt a still simpler method, and employ a piece of gum-elastic tubing alone, which he would tie with a silk ligature to the other central, so as to bring the knot on the centre of the labial face, and, stretching the band between the two, carry it behind the irregular tooth up between the central and lateral, and make it fast upon the labial face of the latter tooth, constituting at once a simple and effective appliance. To turn a tooth upon its axis, he would apply two ligatures with gum-elastic rings, one starting from the labial face and running inward, and the other starting from the palatine face and running outward, the two forces so operating as to rotate the tooth in its socket; occasionally some auxiliary arrangement may be necessary, but this is very seldom or scarcely ever required.

Dr. Woolworth said, in the correction of an irregular arch he would apply ligatures so wound between the teeth as to exert pressure in the desired direction, somewhat upon the principle of the figure of 8, having both turns, however, to pass over the same side of the tooth which it is designed to move.

Dr. Watt was inclined to dispense with metallic bands and appliances; he employs flax in preference to silk for ligatures, since it possesses more contractile power. Flax, he thought, was also more desirable than rubber, for it contracts to a certain point and then firmly retains the tooth in position, allowing it some time to recuperate; rubber, however, exerts a *continual* traction, occasioning much soreness, and endangering the life of the periosteum.

Dr. Ellis thought that rubber ligatures in judicious hands would seldom destroy vitality in the periosteum; that membrane, on the contrary, will undergo very harsh treatment without injury, and its tenacity of life is proverbial.

Dr. Goldey said that where two central incisors stand with their mesial faces presenting inward, he would adjust two small gold bars, one upon the outside and one upon the inside, and connect the two with a rubber ligature passing between the teeth; this apparatus he has found effective in such cases.

Dr. Sylvester described a case in which the upper cuspidatus closed inside of the lower arch. This he corrected by means of a rubber plate fitting the lower jaw, and provided with an inclined plane; in front of the lower cuspidatus was an opening with two bands, which, from time to time, were oiled and bent inward, thus exerting a pressure upon that tooth to carry it under.

Dr. Butler advocated rubber for moving teeth, and believed it powerless for harm in educated and scientific hands; the *continual* pressure objected to he regarded as advantageous in expediting the operation, while the soreness referred to was seldom experienced after the first application.

Dr. E. A. L. Roberts uses rubber for the regulation of teeth, and retains them in position by ligatures of thread.

Dr. Bonville exhibited an ingenious and somewhat complicated apparatus adapted to a model of the case which it was designed to correct.

Dr. Buckingham thought that we should endeavor to avoid a hasty condemnation of any apparatus; all no doubt possessed some valuable points, and might in turn prove serviceable. He expands the jaw by the accurate adjustment of springy plates.

Dr. W. B. Roberts described a case in which all the upper teeth between the bicuspids were in and out alternately; he corrected it by ligatures fastened to a plate which was swaged to fit the entire mouth, with a semicircular opening for the teeth to project through, thus leaving a bar upon the front of the arch, to which he fastened ligatures, thus enabling him to operate on all the irregular teeth at the same time.

The President, Dr. Taft, having sufficiently recovered from his indisposition to participate in the proceedings, entered the hall, when he was greeted with an earnest and hearty welcome, and Drs. Watt and Hawes were appointed a committee to conduct him to the chair.

Upon taking his seat, he remarked that he had learned with surprise of his appointment; he thanked the Convention for this mark of kindness, and promised to be present and discharge his duties so far as his health would permit.

Dr. Buckingham explained a simple buffer, formed from a piece of metal, cut in the form of the letter H; the perpendicular pieces are bent so as to clasp a molar inside and out, with the horizontal bar passing over the grinding surface.

Dr. Searle related a case of undue prominence of the upper teeth, which occurred in the practice of Dr. Brewster. The patient, a Russian nobleman, was excessively sensitive with regard to the deformity, and exceedingly anxious to have it corrected; after visiting, however, several dentists and physicians of repute, and meeting with no encouragement, was about to resign all further efforts, when he came under the notice of Dr. Brewster, who promised to attempt the case if his instructions were implicitly obeyed, and the utmost patience exercised in relation to the final result. The apparatus employed consisted of a saddle upon the back of the head, with a ligature passing directly over the front teeth; and in eight months so great a change was wrought, that, upon returning home, his friends failed to recognize him.

The Committee on Thanksgiving reported, and recommended the devotion of the hour between 9 and 10 A. M. to religious exercises. Carried.

On motion, the third subject for discussion was now taken up. "1. Filling teeth. 2. Filling temporary teeth. 3. Best material for same."

Dr. Rogers spoke in favor of tin foil as a material for filling teeth, from its preservative qualities. Dr. Perkins, of Albany, spoke in favor of the use of the mallet in filling teeth, and stated that he valued tin as a material in some cases. Dr. Smith, of Syracuse, was also in favor of the use of tin, and gave a case in point, of a tin filling that had remained securely in the mouth for thirty-four years.

Dr. Hawes objected to the use of tin, considering it injurious to the teeth, and believed gold to be the best material for such uses now known.

Dr. Atkinson considered this the most important question that could come before the Convention; spoke in favor of gold, considering it by far the best material for filling, if properly put in. In filling teeth after excavating, advised to saturate the cavity with creosote. Considered that first-class fillings should be made by supporting the gold on flanges of itself, projecting over the edge of the cavity, and protecting the enamel. Dr. Atkinson spoke in favor of the use of the mallet, and, by courtesy of the Convention, was permitted to expound his peculiar views at considerable length. Dr. J. A. Perkins described a case in which he filled a bicuspid inside of an accurately fitted silver fang, using the mallet, and afterwards removing the fang.

Afternoon Session.

The Convention was called to order at 4 o'clock, the Vice-President in the chair. Dr. Wood read a paper upon the use of fusible metal in filling teeth, and afterwards exhibited specimens of the metal, and also gave illustrations of the mode of using it.

Dr. Perkins, of Albany, mentioned a case in the treatment of which he had used this material with success. He used a silver screw fastened in the fang canal, and built fusible around it, forming the crown of the metal.

The selection of a place for convening in 1864 was declared in order, when the following names were suggested: Niagara Falls, Detroit, Philadelphia, Cleveland, Fort Edward, Newport, and Brooklyn.

After much balloting, Philadelphia received the choice.

Upon motion, Dr. Wood exhibited the instruments, and demonstrated the method of manipulating his plastic filling.

Dr. Buckingham asked whether the range of temperature in different kinds of food would occasion contraction or expansion of Dr. Wood's filling.

Dr. Wood, in reply, said that he had never tested it, but thought it likely that it would.

Dr. Watt believed that in the solid state it obeyed the laws regulating all other metals and alloys; he thought that some alloys would expand in the act of congelation, and afterward contract.

Dr. W. B. Roberts thought that all metals would contract and expand, from cold and heat; he would not theorize, however, in this direction, but wanted dentists to give Dr. Wood's filling a thorough trial and test its merits.

Dr. A. Hill said that Dr. Wood advocated filling the base of large cavities with Hill's stopping, and capping with the fusible metal.

Dr. Atkinson uses Dr. Wood's plastic metal almost everywhere where he cannot employ gold, and regards it as a very valuable addition to the list of materials for filling teeth.

Dr. J. A. Perkins uses Hill's stopping and Wood's fusible metal in the same cavity. He referred to the great amount of work necessary to do a first-class operation, both in the preparation of the cavity and the introduction of the filling.

Dr. Butler wanted to know of Dr. Wood how he would manipulate his plastic filling in front teeth, where the enamel was very thin.

Dr. Wood replied that he would cover the entire surface of the cavity with a sheet of gold foil, not permitting it to protrude, however, as the contact of the two metals might occasion galvanic action.

Dr. Watt said that for seven years he had used nothing but gold and

Hill's stopping; but about one year ago he introduced three fillings of tin foil, and three of Wood's metal, and upon recent examination the alloy was found to be in much the best condition. He regards Dr. Wood's plastic metallic filling as a blessing to the profession. He said that a tin filling was injured more by the action of chlorine than oxygen.

Dr. C. Palmer testified to the serviceability of Dr. Wood's filling. He has been in the habit of first placing a layer of gold foil under tin and fusible fillings, as suggested by Dr. Butler.

Dr. Tefft described a tooth of his own in which Dr. Wood's filling had been introduced.

Dr. Eccleston had observed the fact that tin fillings would produce a hardened condition of the denture.

Adjourned.

Third Day.—*Morning Session.*

The Convention was called to order by the President at 9 1-2 o'clock. In conformity with the resolution adopted the previous day, the Convention proceeded to observe the occasion by appropriate ceremonies.

After some remarks by the President, Dr. Watt read by request some passages from the Scriptures. He was followed by the Rev. Mr. Anderson, of Brooklyn, L. I., in a highly impressive and edifying prayer, which was listened to with great interest by the assembly. Governor Cannon, of Delaware, being present, was called upon and responded in a short and well-timed address. Prof. Wood kindly offered his services, and, assisted by Drs. Rogers, Perkins, and Sheffield, and followed by the Convention, sang "My country, 'tis of thee," with great sweetness and correctness: indeed, we do not remember to have heard this beautiful popular patriotic hymn rendered in a more satisfactory manner. After the conclusion of this part of the services, Dr. Sylvester made a short and effective prayer, and was followed by appropriate patriotic addresses from Drs. Rogers, Watt, Atkinson, and others. Rev. Mr. Anderson, being called upon, made a most eloquent and poetic address, which was decidedly the feature of the occasion. His allusions to the probable future of the great western nation, and the evident design of the Almighty, as shown even in the configuration of the land, was eminently original, and elicited repeated bursts of hearty applause. After singing the doxology by the whole Convention, and a benediction from Mr. Anderson, the proceedings closed, and the Convention took a recess for twenty minutes.

On being again called to order, the regular order of business was proceeded with. The Secretary read the minutes of the preceding day, which were approved and adopted. The President announced as the executive committee for the ensuing year: Dr. L. W. Rogers, Utica, N. Y.; Dr. H. W. Kingsley, Elizabeth, N. J.; Dr. J. H. Watling, Ypslanti, Mich.; Dr. A. Hill, Norwalk, Conn.; Dr. H. A. Smith, Cincinnati, Ohio. The subject for discussion made the special order was "The treatment of Cleft Palate," which was opened by Dr. Atkinson, who spoke at some length in reference to the origin and nature of the disease, and the necessity for operation as the means of relief.

He was followed by Dr. Norman W. Kingsley, of New York.

Dr. Kingsley considered the only true necessity for an operation for cleft palate, was the impossibility of nursing a child so afflicted. He had never met with a case where an operation for this disease enabled a child to use its voice successfully. Owing to the conformation of the diseased parts after operation, distinct speech was impossible. Dr. Kingsley proceeded to describe the normal condition of the organs of speech, and the results of interfering with these conditions. By means of the blackboard he next illustrated with diagrams the construction of the organs of speech, and also the effect of fissure of the palate.

Dr. Kingsley then proceeded to describe the nature of this disease, and recapitulate the various means for restoring the palate, in use by different practitioners. He considered that the best material for making an elastic artificial velum, was soft vulcanized rubber, and that from it could be made a satisfactory and useful substitute.

In order to obtain such a result, it was necessary to first have an accurate impression of all the parts; of the edge of the fissure, cavity behind the fissure, pharynx, etc.: this impression he took in plaster, which he considered the best material that could be obtained for this purpose.

Dr. Kingsley then requested Dr. W. H. Dwinelle, of New York, who had just entered the room, to say something on this subject, while he prepared his models to further illustrate the points he had presented.

Dr. Dwinelle first spoke of the importance of specialties in the medical profession, and considered that the dental profession was susceptible of the same subdivision. Under such an arrangement, the treatment of cleft palate would fall into the hands of those best calculated by education and natural talent for the charge.

Referred to Dr. Kingsley's long experience in such practice, and considered him more peculiarly adapted to it, from the nature of tastes. Dr. Kingsley was a worker in clay, and a modeller of very decided merit, and this fact had undoubtedly greatly aided him in the obtaining of his plaster models, on which every thing depended. Desired to assert from his own experience and knowledge that Dr. Kingsley could entirely restore the power of speech by his mode of operating. Had seen one patient who for forty years had been deprived of speech, entirely restored by Dr. Kingsley. But as Dr. Kingsley was now ready, he would not farther detain the Convention.

Dr. N. W. Kingsley then exhibited some models which he had taken, whose perfection was really beautiful; he employs plaster for obtaining impressions, using it in sections to ensure its drawing from the parts. After securing an accurate impression, he makes a model of sheet gutta-percha (any other plastic material will answer equally well), thickens the appliances in front; behind it must be elastic, and reach over the edges of the fissure above; he then makes a velum of hard rubber, which, if correct, he duplicates in elastic rubber. He exhibited and described several specimens, one of which was an exceedingly difficult case, in which the velum was made to support an entire upper artificial denture. He stated that he had, by means of the artificial velum, rendered the speech of patients, whose conversation it was impossible to understand, so perfect and intelligible that any remaining peculiarity would escape detection except by the professional and practised ear. Before taking an impression, he makes progressive attempts, in order to accustom the parts, and establish a tolerance to the presence of the plaster.

Dr. Dwinelle explained Dr. Kingsley's method of taking impressions in sections, and the dexterity requisite to separate the parts at exactly the proper time.

Dr. Kingsley vulcanizes the velum in a mould of type-metal, in order to avoid the excrescences which a plaster model always presents, and thus also provides for the construction of duplicates when required. The rubber used is prepared expressly for the purpose. When practicable, the apparatus is confined forward by clasping to the teeth upon both sides.

Dr. John Allen indorsed with pleasure the statements of Dr. Kingsley, and congratulated him and the profession on the result of his efforts; he considered that Dr. Kingsley attained a higher point in this direction than had ever before been reached, and could appreciate the self-culture and patient perseverance necessary to accomplish such a success.

Dr. N. W. Kingsley said that Delabarre had constructed an artificial velum, but no description of the instrument is on record. He found Dr. Stearns in New York, and the rumor of his operations first suggested the idea of employing vulcanized rubber; the instrument constructed by Dr. Stearns was excessively clumsy, accomplished an imperfect result, and was too poorly adapted to admit of general use.

Dr. Searle gave an account of his fellow-townsman, Dr. Stearns, who labored incessantly for the construction of an instrument to remedy his defective speech, consequent upon a fissured palate, and by dint of the greatest perseverance finally succeeded in obtaining one which answered his purpose quite satisfactorily; this was the first one of the kind that had come under Dr. Searle's notice: for the very great modifications and improvements, he thought Dr. Kingsley entitled to the highest credit.

Dr. Hawes offered the following:—

Resolved, That a vote of thanks be tendered Dr. Kingsley, for the very interesting description of his method of treating cleft palate; and that to him is due the honor of first making a perfectly practical artificial velum.

Dr. A. Hill appreciated and valued Dr. Kingsley's improvement and remarks; was gratified to have them, and knew that the invention was the result of great perseverance and reflection. He believed that these great triumphs legitimately belong to American dentistry, and hoped that it would continue as heretofore, ahead! He would not wish to detract the least from Dr. Stearns, but thought very great credit due Dr. Kingsley.

Dr. Dwinelle regarded the *perfection* of Dr. Kingsley's instrument of the greatest importance. Credit, he thought, was due Dr. Stearns for his conception of such an appliance; yet for its adaptability to, and toerance by, the tissues with which it comes in contact, Dr. Kingsley is entitled to the highest commendation.

Dr. J. Allen said that if the result of a project was not accomplished, and another succeeded in bringing it to perfection, to the latter he regarded the credit due.

Drs. Hill, Whitney, Perkins, and others participated in the discussion, all awarding Dr. Kingsley great credit.

Adjourned.

Afternoon Session.

The Convention was called to order by the President, at 4 o'clock. On motion of Dr. Atkinson (the subject of "cleft palate" being closed), by consent of the Convention, Dr. Palmer, of Ohio, was allowed time to explain the nature and uses of his instruments for filling teeth; which he accordingly did, with the assistance of the black-board.

On motion, the subject in regular order was now taken up: "Diseases of the Antrum, and their treatment." This subject was opened by Dr. Atkinson, who proceeded to investigate its remote and immediate causes and effects with considerable earnestness, although somewhat discursively.

Cases were then described by Dr. Newton, of St. Johnsbury, Vt., Eccleson and Palmer, of Fitchburg, Mass. Dr. Newton had effected a cure by the use of nitrate of silver. The subject was continued by Drs. Kingsley, of Elizabeth; Hill, of Connecticut, and others, when, on motion, the regular order of business was suspended, for the purpose of enabling the Convention to consider the subject of "Nitrous Oxide Gas."

Dr. John Allen, being requested to speak to the subject, proceeded to give his opinion in regard to it; said that he considered this gas as the best anæsthetic he had ever known; described the nature and rapidity of its action. It occupied only about a minute and a half before anæsthesia was produced, and about the same length of time before its influence passed away. Dr. Allen illustrated his views by describing its influence in cases that had come under his own supervision. He believed that the best way to extract teeth was to use no anæsthetics whatever; but, if any were used, considered the "nitrous oxide" the best and safest we have. He remarked, however, that it was tedious and difficult to make, and troublesome to keep, and he did not think it would get into general use among dentists of small practice. Dr. Searle, of Springfield, Mass., stated that he would rather use this gas than any other, considering it less dangerous than any other, and quite as powerful as the best. He proceeded to delineate upon the blackboard his mode and apparatus for making the gas. Had used it for about three years.

Dr. J. Allen said, understanding that Dr. S. S. White had had a large experience with the gas and its manufacture, he hoped that he would favor the Convention with some remarks upon the subject.

Dr. S. S. White said, he supposed the only object in calling upon him was the hope that some practical suggestions might be offered, to guard those who were without experience in the preparation of nitrous oxide gas from some mistakes they would be liable to make. The nitrate of ammonia of commerce is supposed to be often impure; care should therefore be taken to procure it of a reputable chemist. The *fused* nitrate of ammonia is much to be preferred to the crystals. The mode of making the gas for inhalation is to heat the *fused* nitrate of ammonia in a glass retort upon a sand-bath, and pass the gas through a quantity of water sufficient to absorb the nitrate of ammonia that may have passed over in the form of vapor without being decomposed. Care should be taken to avoid overheating it, as an undue temperature would cause volatilization instead of a decomposition of the salt, which would therefore be lost. The operation requires intelligence and care, but, with these, is not difficult.

Dr. Buckingham could not see in what respect it was superior to ether; its generation and the difficulty of keeping it rendered it certainly much more troublesome. The anæsthetic property of nitrous oxide gas was first discovered by Sir Humphrey Davy. He thought ether and chloroform dangerous only when given without a due mixture of atmospheric air. He would, however, advocate a thorough trial and investigation of the nitrous oxide.

Dr. Watt had not tried the nitrous oxide, but would like to see its qualities thoroughly tested. He deemed chloroform and ether safe in judicious hands; but never administered either for trivial operations.

Dr. Atkinson said that there was not a single *well-authenticated* case of death from chloroform on record; yet he never administers it without apprehension, and never passes a patient deeply under its influence for a trifling operation.

Dr. A. Hill commenced the use of ether under Morton, and afterward employed chloroform, administering it in three cases, the last of which proved so alarming that he abandoned its use, and could not now be induced to employ either again. He believed that the use of anæsthetic agents offered inducements for an unnecessary sacrifice of teeth.

Dr. J. Allen thought the argument that anæsthetics would promote a wholesale slaughter of teeth, was simply an assumption not borne out by facts. It seemed to him unreasonable that any such result should be induced, by the introduction of an anæsthetic agent into the hands of a scientific and *educated* profession.

Dr. W. B. Roberts offered the following :—

"*Whereas*, This Convention having for its object the elevation and advancement of our science, desire on all occasions to recognize, indorse, and to give encouragement to those of our numbers who contribute most largely to the progress and perfection of our noble art; and

"*Whereas*, Dr. Norman W. Kingsley has this day presented and demonstrated to this Convention his peculiar method of restoring artificially the lost palate and velum, in a manner so clear and comprehensive as to entitle him to a substantial testimonial from this Convention ; therefore,

"*Resolved*, That this Convention present to Dr. Kingsley a gold medal, as an expression of their high appreciation of his valuable contribution to our profession.

"*Resolved*, That a committee of five be appointed by the Chair to carry out the object of this resolution, with power to draw upon the Treasurer for an amount not exceeding fifty dollars." Carried.

Adjourned.

FOURTH DAY.—*Morning Session.*

Called to order at nine o'clock. The minutes of the previous meeting were read and adopted. The next subject for discussion was "Alveolar Abscess."

Dr. Atkinson dwelt upon the importance of a thorough consideration of the subject, and gave a general analysis of the principles of alveolar abscess.

Dr. Dwinelle thought the matter too much magnified, thus rendering a simple subject unnecessarily obscure. Diseases of the antrum are equally amenable to treatment when the cause of irritation is removed, yet its nature is not so thoroughly understood by the medical profession as by the specialists of dentistry. In case of ordinary alveolar abscess, he dries out the pulp cavity and fills it with creosote, introduced drop by drop on the end of a cotton-wound broach. This he injects through the apicial foramen, by forcing upon a gutta-percha plug placed over the orifice. He said that alveolar abscess was well understood twenty years ago, although great improvements had since been made in the treatment.

Dr. W. B. Roberts described a case of alveolar abscess which he treated, filling with gold around a pivot of platina introduced into the root. The operation was completed six years since, and is still doing well.

Dr. Buckingham said that, like Dr. Dwinelle, he was in favor of simplification. He thought that during the last twenty years rapid advances had been made in solving the nature and treatment of alveolar abscess.

Dr. W. B. Roberts mentioned a case of fang-filling performed by Dr. Hudson, of Philadelphia. The tooth lasted forty-five years, when the crown broke off, and the case falling into his (Dr. R.'s) hands, he afterward pivoted upon the remaining root.

Dr. Hawes was much better acquainted with the subject than he was some time since; was surprised to learn that alveolar abscess was so thoroughly understood twenty years or more ago, and referred to the fact that an educated man like Dr. Harris, in his work, suggested extraction as the treatment.

Upon motion, the consideration of "Mechanical Dentistry" was taken up.

The President substituted the name of S. S. White, in place of Dr. Buckingham, on the Committee on Dentists in the army.

Dr. Dwinelle said that Dr. Holmes had suggested a method for avoiding the disagreeable heating effect which vulcanite produces upon the gums of some individuals. He drills holes through the rubber plate, fills them with gold wire, smooths and polishes; or vulcanizes with an air-chamber of gold plate. It operates upon the principle of conduction, and has proven very effective.

Dr. Holmes described a case which he had relieved in this way.

Dr. S. B. Palmer described his own case, where, three weeks ago, he had rubber substituted for gold. It excited the disagreeable heat referred to, and rendered the roof of the mouth insensible to the impression of cold upon taking ice-cream. He believed that in proportion to the amount of metal would this difficulty be obviated.

Dr. Perkins said: "I never introduced rubber but it produced irritation in the mouth. How to remedy that I cannot tell, unless we introduce some other substance of a more porous nature. I cannot bear the thing. I cannot hate it enough. I sometimes hate myself, that I cannot get up and say enough against it. It is the most accursed contrivance that was ever thought of. I know in many cases printers' ink is used to drum up this infernal, miserable fixture, at six, seven, eight, and ten dollars a set. I wish I could find a vocabulary of language with words in it strong enough to put down this thing. (Applause.)

"Well, to be serious—I wish that the members of this Convention who claim or who have any sort of claim to respectable standing, would look at this thing squarely in the face. I tell you, my friends, it seems to me to be to our advantage to maintain something like a dignified position in the business in which we are engaged. Now, for my own part, I will be one of two things: I will either be among the first in the business in which I am engaged, or I will be something other than that. If I cannot be a decent dentist, I will go at the next best thing I can do; if I cannot be decent at that, I will go to the next; and I will go down and be a boot-black, and be the *best* boot-black in the State. (Applause.)

"If we take this matter of vulcanized rubber seriously into account, we will see the influence it exerts upon society. How do the public regard this matter of vulcanized base? They look upon it that the material is good for nothing. It costs nothing, is worth nothing, and they can go to any tinker who can make a hoe-handle with a pattern, and get a set of teeth made for four or five dollars. And when they get such ideas of the profession, where is our respectability gone to? My mind gets so excited on the subject, that my thoughts go quicker than lightning. I am so mad at myself, when I sit down, that I do not give a death-thrust to it, that I think I will never speak again. What in God's name are we about?" (At this point, the Dr., in his excitement, raised his voice to its highest pitch, when some one cried—"Louder! Louder!" This joke was received with great laughter and applause, in which Dr. P. heartily joined.) The Dr. continued: "I am not mad—I speak the words of truth and soberness. It is well enough to throw in a joke. I think it enlivens an occasion of this kind—makes it pleasant."

The President.—"The subject, Dr. Perkins, is 'Mechanical Dentistry.'"

Dr. Perkins.—"Yes, sir; I have a word more to say on it. I have seen boys in the street; they will have a little round piece of leather—any good respectable kind of leather; it ought not to be too porous; they will wet it in a puddle of water—there is a string attached to it—then they will come this on it"—(Dr. P. illustrating by pulling an imaginary string from the ground). "Now, I think that is like a certain class of dentists who get this rubber question into their heads, and they pull on it as hard as they can. I never made a job of it in my life, but what I was disgusted with myself for having made it. There is not a case in ten thousand of rubber cases, but I could tell as far as I could see the wearer of it. Our object should be to get people to do without artificial teeth as much as possible. Where the real teeth can possibly be made to appear well, and do their duty, we ought to make them; and if we do this, be assured we shall not have to make as many sets of teeth on rubber or any other material."

[Dr. Perkins's remarks were listened to with great amusement and decided approval by the Convention; and the unanimous feeling of his audience was evidently decidedly against the use of this compound! —*Eds.*]

Dr. Perkins was followed by Drs. Hawes and Whitney, who doubted the inflammatory action of the rubber on the gums. Some discussion then ensued between Drs. Dwinelle, Whitney, Goldey, and others, in reference to air-chambers.

Dr. W. B. Roberts said: "I am very glad to see this subject brought up. We find that the best dentists in our profession are trying to attain to the highest perfection possible in the preservation of the teeth by filling. Now, what do they do? They use the best material that can be found in the profession for that purpose. They use the best skill, the greatest amount of energy and ingenuity in introducing that material into the decayed teeth; hence it is in their power to produce the best results. And many of our profession are rising to the very highest pinnacle of fame, in filling teeth, by the course they are pursuing from day to day. On the other hand, we find dentists who are using inferior material in filling teeth, and too often applying inferior skill in adapting that filling. What is the consequence? Do they progress up the hill of dental science? Not at all. You find them standing to-day where they did ten or fifteen years ago. Now, what is the case in regard to mechanical dentistry?—a different branch of dentistry from that of filling teeth; so different, that it requires study, and thought, and ingenuity equal to any branch of the dental art to restore the natural contour of the human face, the beauty of which is so desirable to every one.

"I say, that any man in the profession who wishes to attain to the highest point of excellence in mechanical dentistry, must take the same course he would to attain to that point in filling teeth—he must use the best material that the dental profession can produce, and the best skill and ingenuity he possesses, in the construction of an artificial denture.

"We find such men in mechanical dentistry, as well as in surgical, and they have attained nearer to perfection in inserting artificial teeth than ever has been attained by any one in any other part of the world. Yes, the greatest perfection in mechanical dentistry has been reached in this country. [Applause.] And that has been done by the course I have described, by men who have devoted years and years to their profession.

"It is perfectly astonishing to look over the dental profession and see the amount of inferior material that is inserted into the mouths of the community, which, instead of restoring to perfection those ornaments of beauty, has disfigured one-half of the whole population who are obliged to wear artificial dentures. I say, that with rubber, or even gold, silver, or any material except continuous gum [applause], you cannot produce the expression so essential. And I say, until the dentists are educated up to this point—until the dental profession are convinced of this fact—never will we have attained to that perfection that this country deserves to attain. We have the material with us—we have the *talent*, too; and I am astonished to see some of the best talent of the dental profession wasted upon this base material. [Applause.] Gentlemen, I could give cases where I have believed that this base material has produced bad effects. I have stood at the head and front of the opponents of vulcanite base. Why? Because I have made experiments with it that have proved, to my satisfaction, that there is something about it that is injurious even to the health of the patient. I would enter into particulars on this point, only that in the last numbers of the N. Y. DENTAL JOURNAL I have published several articles showing that fact. I merely wished to call the attention of this Convention to the truth that, if we would attain to the same excellence in mechanical dentistry that we have in filling teeth, we must not disfigure the mouth with inferior material or workmanship."

Dr. Butler thought the base had less to do with the expression, than the mode of inserting the artifical teeth.

Dr. Allen proceeded to speak on the subject of artificial dentures.

He made a long and eloquent exposition of the great merit, for beauty, strength, and durability, of the Continuous Gum over all other materials. He met all objections which could be urged by its opponents, with argument and evidence the most convincing; and when finally he took from his mouth a complete upper and lower denture, and the astounding transformation which the loss of them produced in his features became evident, his triumph was complete. Continued applause showed how earnestly the Convention sympathized with this spontaneous defeat of rubber, and proper elevation of the pure, elegant, and natural Continuous Gum.

Dr. Shepherd exhibited on the blackboard the design of his newly invented Callipers.

Dr. Palmer, of Warren, Ohio, by permission, explained his system of articulation, and restoring the natural contour and expression of the face by means of artificial dentures. Had had considerable experience in Continuous Gum, and considered it the best work.

Dr. E. A. L. Roberts, of New York, exhibited his improvements in vulcanizers; gave a sketch of the history of improvements in them, from their first invention, and described his own inventions, as heretofore patented.

The subject of artificial dentures was continued by Drs. Goldey, Kingsley, Robins, and others. On motion, the rules were suspended to permit a motion to be put, reconsidering the vote appointing the place for the next annual meeting. Considerable discussion ensued on this proposition, which was designated by Dr. Buckingham, of Philadelphia, and Mr. Norton, of New York, as out of order, unparliamentary, and unjust to those of the profession who had already left the Convention, believing, in good faith, that the decision on this subject had been final. Mr. Norton raising the point of order that notice of a reconsideration must be given at the session succeeding that of the original resolution or act, the chair ruled against him; he appealed from the chair, but the chair was sustained by the Convention, notwithstanding an earnest protest from Dr. Buckingham against the proceeding. The rules were suspended, and the motion to reconsider prevailed. On reconsideration, Detroit was selected as the next place of meeting. Mis-

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cellaneous business being now in order, Dr. Atkinson read a paper which was so very miscellaneous, that we failed to obtain either its name or purport.

The following gentlemen were announced as a committee for the preparation of the Kingsley medal: Drs. W. B. Roberts, Wm. H. Dwinelle, John Allen, A. C. Hawes, and W. H. Atkinson.

The President now rose, and, announcing that the Convention was rapidly drawing to a close, desired to offer some remarks on popular dental education. Some topics had presented themselves to his mind upon which he had desired to speak, but his illness had prevented him.

In reference to educating the people on the proper means for preserving the teeth, he would say that he did not believe in keeping patients in the dark.

It was, he believed, mutually advantageous for dentist and patients, that the latter should know as much as possible about their teeth, and the rules for their preservation. Let the dentist encourage in his patient a knowledge of the value of the teeth;—that, when once gone, they can never be replaced again perfectly.

This would result in inducing them to seek the highest skill.

Again, the knowledge that the patient had some acquaintance with the subject, stimulated the operator to do his best. Then, too, the education of patients would give them an insight into the nature, importance, and difficulty of operations, and they would feel much more inclined to award the skilful operator such compensation as his services deserved.

Thus would be removed the only obstacle admitted to stand in the way of the best operations.

As to the best means of accomplishing such education, there were various ways. Conversation was one—printed literature was another—whether in circulars, dental journals, or newspapers. He hoped that all would in some manner engage in this work, and that in another year the Convention might experience good results from it.

After some further remarks, the President thanked the Convention for the honor they had done him, and their kindness in listening to his remarks, and, on motion, declared the Convention adjourned to meet at Detroit, on the first Tuesday in August, 1864.

[We print the following article with a vain hope that its author may come forward and claim his property. But no! the poetic mind that could inspire such thoughts, clothed in such language, must be attached to some one too modest even to advance his title to its authorship. The opinions therein expressed may be taken as the sentiments of those who do not find in Gail Hamilton's harsh view of Saratoga any thing congenial to their own sentiments.

The manner in which we happened upon this MS. was peculiar.

The Convention had ended its sitting, and one by one the last remaining dentists had wended their way homewards. Only we were left.

One morning, while taking our "Constitutional" around Congress Spring, we espied, in the shadow of one of the primeval trees that ornament that lovely spot, a soiled and stained roll of manuscript. Any thing in that line is fair game for an Editor, and we appropriated it without scruple.

Perhaps some lone and bachelor dentist has relieved his overwrought brain and heart by thus giving way to his feelings: if such be the case, we say: "Unknown professional and unhappy brother, we sympathize with you, and, to prove it, we print your manuscript gratis."—Eds.]

SARATOGA.

A REVERY.

Full of delicious memories is the name of Saratoga. How, at the mere mention of the word, do thoughts come thronging upon the mind, of hours passed in unalloyed enjoyment. What visions of Elysian scenes rise before us as we mentally contemplate the lovely park, at whose entrance stands the temple whose matutinal services are thronged by eager worshippers of the Goddess Hygeia, clad in gay vestments, whose rainbow-colored lines so fittingly adorn and heighten the charms which nature and art have combined to lavish upon the scene. Fairer than the houris, whose promised presence makes the Mahomedan long for his sensuous paradise, are the maidens who crowd the fountain where the life-giving waters are dispensed,—waters that, in the presence of such votaries, need no angel to trouble the pool, but joyously boil and dance, in their haste to touch the ruby lips waiting to quaff them. Could the Spanish adventurer, wasting his energies in the vain search of the fabulous water of youth, but have stood at the side of this sparkling fountain, and surveyed the living stream of health and beauty that daily ebbs and flows there, he would have sought no farther for the mysterious source; nor could the magnolias and the orange-groves of the sunny land he discovered, have lured him away from the fairer flowers that blossom in the cheeks of the daughters of a more wintry clime. How like an oasis in the desert of life, whose monotonous round of daily cares serves but as a foil to such fair scenes, appear the halcyon days, when, flinging from us the garments soiled with the dust and turmoil of our daily avocations, we don for awhile our holiday attire, and like the butterfly, soaring from the grovelling chrysalis, leave behind us all care and contention, and, taking no thought for the morrow, bask in the sunshine that calls us to enjoy it, as free and as careless as the birds of heaven. What care we for the porticos where hoary sages dispense their antique lore? Here are fairer porticos than e'er were trod by stoic or cynic, sage or sophist, and where no group of staid disciples gather to pick up the crumbs of dusty learning or choking logic; but, seated in cool porches, shaded by noble groves, under whose quivering foliage the gentle breezes play with grateful music, we drink inspiration from lips uncurled by scorn or knowledge of the world, and eyes whose beaming glances, undimmed by vain prying into the mysterious secrets of nature, teach to the willing disciple sweeter secrets and deeper mysteries than ever entered into the musty brains of those old explorers after the unknown. Here, under fairer groves than ever were walked by Plato and his disciples, is an academy whose aisles are crowded by scholars apt to learn; and amid the grateful shade, to the soft strains of music whose melody is only excelled by the dulcet tones of the voice to which we are listening, we drink draughts of learning from nymphs more charming than ever haunted the fancy of ancient lover by forest or fount; the old yet ever new lesson which has been from the beginning, and will be to the end. Would that we might be gifted with perpetual youth in these true Epicurean gardens, to renew eternally the delights which make these the halcyon days to which memory is ever fondly turning, with a pang that they are flown. Long as memory holds her place shall the thought of Saratoga be linked with one of fairy form, who in this henceforth memorable year cast over days that seemed as hours, nay, as minutes, so swiftly did they fly on their enchanted round, a spell of magic brightness. Why did the senseless sun, on days like these, pursue his inexorable course (as jealous of too much happiness), lengthening the noonday shadows into evening, ere yet the morning seemed to have passed? Full many a youthful Joshua was ready to stretch forth his hands and bid the sun stand still, could but his bidding have been heeded. But swifter than our fastest gallop the unrelenting hours glide away, and vain the efforts of our flying feet to overtake them. Too soon, alas! the summer days have flitted, and with them the companions whose presence gave delight to every scene. Inexorable as fate, the railroad has borne them away as on the wings of the wind. The whispering groves remain, but not those who could whisper softer music; the sighing pines still murmur their melancholy refrain, but the heart pines for another sigh. The fountain gurgles and pours forth its refreshing stream, but the lovely ones are fled that made it a "well-spring of pleasure," and its voice has a cadence of sadness. The lofty porticos of the classic "Clarendon," erstwhile lined with votaries of pleasure, and broidered with fluttering garments that hedged about with more than kingly divinity the forms of fair women, now echo to the solitary tread, as lonely as the halls of the Montezumas. The lordly column, that but now sheltered from the impertinent gaze of passers-by the glances of eyes looking "love to eyes that spake again," or in whose friendly shadow, secure from glaring gas-light, happy hearts dallied in all the sweets of that greatest of youthful blisses—flirtation, now stands but as a monument of departed joy.

Well, let us back to our offices and our laboratories; but through the weary hours of toil at trade or book, will come stealing ever and anon glances of the transient joys so long desired, so quickly passed, to lighten like a glimpse of Elysium our irksome everyday life, and make us bless the memory of SARATOGA.

"THE BREATH OF LIFE" IN RELATION TO THE TEETH.

It will doubtless be remembered by those who attended the late Convention at Saratoga, and may be read by all in the reports, as published in the dental periodicals, that allusion was made to the influence upon the teeth of the custom of breathing through the mouth during sleep, instead of through the nose. The subject was touched upon by Dr. Ellis, of Philadelphia, and one or two others, but only lightly; and it certainly seems of such vital importance, not only as regards the health of the teeth, but of the whole system, that we think it might well be embodied among the subjects for discussion at our next annual meeting, and would so suggest it to the Executive Committee, as follows: "The deleterious influence upon the human teeth, of the habit of breathing through the mouth during sleep."

We had intended to allude to this subject, when we accidentally came across a curious book, bearing the following title: "The Breath of Life; or, Mal-Respiration, and its effects upon the Enjoyments and Life of Man. By Geo. Catlin, Author of 'Notes of Travels amongst the North American Indians,' &c., 8vo. New York, 1861."

An examination of this work, combined with the recognized authority of its writer, confirmed us in our first intention; and if we only serve to direct public attention to the book, and the subject, we shall feel that our trouble will not have been taken in vain.

Mr. Catlin traces all the numerous diseases of the throat, lungs, facial nerves, and even of the alimentary canal, stomach, and intestines, to this prolific cause.

Having spent much time among the North American Indians, and having observed their universal freedom from most of the diseases so prevalent among civilized nations, he set himself to discover the cause of this seeming anomaly,—since he found them exposed to all the variations of climate, and all the common causes of such diseases—and finally conceived that he had discovered their guardian angel, in the habit so easily inculcated of keeping the mouth closed during sleep.

One cannot read Mr. Catlin's book without being satisfied of the injury that must be done to the lungs by the cruel habit he deprecates. His demonstration of the natural results is so satisfying, and renders them so obvious to every judgment, that the reader is led irresistibly after him, and arrives at conviction with the *finis.* We cannot afford space or time in this Journal to do for the public what every one ought to do for himself, viz., review this book: but there are some important facts contained in it, in reference to the preservation of the teeth, that we will extract for the benefit of our readers.

Mr. Catlin states, that during his wanderings among the Indians he has visited over 150 tribes, numbering more than 2,000,000 souls, and, of course, has had opportunity for more extended observation among this curious people than any other man living.

It may be remarked here, that, from accurate and complete statistics, it has been found that in the large cities and towns of civilized countries, one-half the human race die before they reach the age of five years; and a large proportion of these deaths, probably one-fifth, from teething. In answer to a question put to a Sioux Chief by Mr. Catlin, it was stated that their children always seemed to suffer more or less while cutting their teeth; but he did not believe that in the whole Sioux tribe a child ever died from that cause.

By a custom peculiar to the Mandan tribe, the skulls of the dead are bleached, and carefully and religiously preserved in large circles on the ground. Amongst several hundreds of these skulls, Mr. Catlin was forcibly struck "with the almost incredibly small proportion of crania of children; and even more so, in the almost unexceptional completeness and soundness (and total absence of malformation) of their beautiful sets of teeth, of all ages, which are scrupulously kept together, by the lower jaw being attached to the other bones of the head." These conditions, he found, were common to such of the other tribes as he had an opportunity of examining. Mr. Catlin continues as follows:

"NOTE.—A short time after I had described to the world the beautiful formation and polish of the teeth in these skulls, the *forceps came*, and (like the most of those left in the Indian graves on the frontiers) the most beautiful of them, which had chewed buffalo meat twenty-five years or half a century, are now chewing *Bread and Butter* in various parts of the world."*

"The mouth of man, as well as that of the brutes, was made for the reception and mastication of food for the stomach, and other purposes; but the nostrils, with their delicate and fibrous linings for purifying and warming the air in its passage, have been mysteriously constructed, and designed to stand guard over the lungs—to measure the air and equalize its draughts, during the hours of repose.

"The atmosphere is nowhere pure enough for man's breathing until it has passed this mysterious refining process; and therefore the imprudence and danger of admitting it, in an unnatural way, in double quantities upon the lungs, and charged with the surrounding epidemic or contagious infections of the moment.

"The impurities of the air, which are arrested by the intricate organizations and mucus in the nose, are thrown out again from its interior barriers by the returning breath; and the tingling excitements of the few which pass them cause the muscular involitions of sneezing, by which they are violently and successfully resisted.

"The air which enters the lungs is as different from that which enters the nostrils, as distilled water is different from the water in an ordinary cistern or a frog-pond. The arresting and purifying process of the nose upon the atmosphere, with its poisonous ingredients, passing through it, though less perceptible, is not less distinct nor less important than that of the mouth, which stops cherry-stones and fish-bones from entering the stomach.

"The teeth of man, as with the brutes, are wisely constructed to answer their intended purpose through the natural term of life, and would do so, no doubt, but from abuses, the principal one of which I consider to be the pernicious habit already explained. The saliva exuding from

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[* We may remark, what is of course well known to the profession, that Mr. Catlin here alludes to the custom, in vogue among dentists before the introduction of porcelain teeth, of inserting natural teeth in place of those lost or extracted. It will probably, however, be new to most, that the dentists were in the habit of sending expeditions to the Far West to rob the skulls of dead Indians of their teeth; and the fact would doubtless have interfered with the comfort of those who wore them, if it had been generally circulated.—Eds.]

the gums, designed as the element of the teeth, floods every part of the mouth while it is shut; continually rising, like a pure fountain, from the gums, at the roots of and between the teeth; loosening and carrying off the extraneous matter which would otherwise accumulate, communicating disease to the teeth and taint to the breath.

"By nature, the teeth and the eyes are strictly *amphibious ;* both immersed in liquids which are prepared for their nourishment and protection, and with powers of existing in the open air long enough for the various purposes for which they were designed; but beyond that, abuse begins and they soon turn to decay. It is the suppression of saliva, with dryness of the mouth, and an unnatural current of cold air across the teeth and gums during the hours of sleep that produces malformation of the teeth, toothache, and tic douloureux, with premature decay, and loss of teeth, so lamentably prevalent in the civilized world.

"Amongst the brute creations, that never open their mouths except for taking their food and drink, their teeth are protected from the air both day and night, and seldom decay; but with man, who is a *talking* and *laughing* animal, exposing his teeth to the air a great portion of the day, and oftentimes during the whole of the night, the results are widely different. He is oftentimes toothless at middle age, and, in seven cases in ten, in his grave before he is fifty.

"If civilized man, with his usual derangements and absence of teeth, had been compelled to crop the grass, like the ox and the horse, as the means of his living, and knew not the glorious use of the *spoon*, to what a misery would he have been doomed, and how long could he exist? The loss of a tooth or two with those animals would result in their death; and how wise and how provident therefore, the designs of the Creator, who has provided them with the unfailing means of supporting their existence, and also the instinctive habits intended for the protection of those means."

In reference to infants and the mode of culture and nursing, common among civilized mothers, Mr. Catlin says as follows:—

"At this tender age, and under the kind treatment just mentioned, is thoughtlessly laid the foundation for the rich harvests which the dentists are reaping in most parts of the civilized world. The infant passes two-thirds of its time in sleep, with its mouth open, while the teeth are presenting themselves in their tender state, to be chilled and dried in the currents of air passing over them, instead of being nurtured by the warmth and saliva intended for their protection, when they project to unnatural and unequal lengths, or take different and unnatural directions, producing those disagreeable and unfortunate combinations which are frequently seen in civilized adult societies and oftentimes sadly disfiguring the human face for life."

"In all of these instances there is a derangement and deformity of the teeth, and disfigurement of the mouth, and the *whole face*, which are not natural; carrying the proof of a long practice of the baneful habit, with its lasting consequences; and producing that unfortunate and pitiable, and oftentimes disgusting expression, which none but civilized communities can present.

"Even the brute creations furnish nothing so abominable as these; which justly demand our *sympathy*, instead of our *derision*. The faces and mouths of the wolf, the tiger, and even the hyena and the donkey, are agreeable, and even handsome, by the side of them.

"What physician will say that the inhalation of cold air to the lungs through such mouths as these, and over the putrid secretions and rotten teeth within, may not occasion disease of the lungs and death? Infected districts, communicate disease—infection attaches to putrescence, and no infected district can be so near to the lungs as an infected mouth."

"No man or woman with a handsome set of teeth keeps the mouth habitually open; and every person with an unnatural derangement of the teeth is as sure seldom to have it shut. This is not because the derangement of the teeth has made the habit, but because the habit has caused the derangement of the teeth.

"If it were for the sake of the teeth alone, and man's personal appearance, the habit I am condemning would be one well worth struggling against; but when we can so easily, and with so much certainty, discover its destructive effects upon the *constitution* and *life* of man, it becomes a subject of a different importance, and well worthy of being understood by every member of society, who themselves, and not physicians, are to arrest its deadly effects.

"So far back as the starting-point in life, I believe man seldom looks for the causes of the pangs and pains which beset and torture him in advanced life; but in which, far back as it may be, they may have had their origin.

"Little does he think that his aching, deformed, and decaying teeth were tortured out of their natural arrangement and health, in the days of their formation, by the cold draughts of air across them; or that the consumption of his decaying lungs has been caused by the same habit; and that habit was the result of the actual tenderness, but oversight, of his affectionate *mother*, when he slept in her arms, or in the cradle."

In advising children against the habit of sleeping with their mouths open, Mr. Catlin goes on to say: "There are many of you who read, to whom this advice will not be necessary, while many others of your little companions, will attract your sympathy when you see them asleep, with their mouths strained open, and their sensations any thing but those of joy and rest. Their teeth are growing during those hours, and will grow of unequal lengths, and in unnatural directions, and oftentimes disabling them in after-life, from shutting their mouths, even in their waking hours, and most lamentably disfiguring their faces for the remainder of their days.

"The natural mouth of man is always an expressive and agreeable feature; but the departures from it, which are caused by the predominance of different passions or tastes, or by the perfectly insipid and disgusting habit which has been explained, are any thing but agreeable; and but little in harmony with the advance of his intellect.

"Open mouths during the night are sure to produce open mouths during the day; the teeth protrude, if the habit be commenced in infancy, so that the mouth cannot be shut, the natural expression is lost, the voice is affected, polypus takes possession of the nose, the teeth decay, tainted breath ensues, and the lungs are destroyed. The whole features of the face are changed, the under jaw, unhinged, falls and retires, the cheeks are hollowed, and the cheek-bones and the upper jaw advance, and the brow and the upper eyelids are unnaturally lifted ; presenting at once, the leading features and expression of *Idiocy*.

"I knew a young lady, many years ago, amiable and intelligent, and agreeable in every thing excepting the unfortunate derangement and shapes of her teeth ; the front ones of which, in the upper jaw, protruding half an inch or more forward of the lower ones, and quite incapable of being covered by the lip, for which there was a constant effort, the result of which was a most pitiable expression of the mouth, and consequently of the whole face, with continual embarrassment and unhappiness of the young lady, and sympathy of her friends. With all the other charms requisite to have soothed and comforted the life of any man, she lived a life of comparative solitude; and a few years since, after a lapse of thirty years, I met her again; and though in her old age, she was handsome,—her teeth were all gone, and her lips, from the natural sweetness and serenity of her temper, seemed to have returned to their native and childish expression, as if making up for the unnatural and painful servitude they had undergone.

"How strange is the fact, that of the three creations—the Brute, the Savage, and the Civilized Races—the stupid and irrational are taught to perfectly protect and preserve their teeth, through the natural term of life; the ignorant savage races of mankind, with judgment enough *comparatively* to do so; when enlightened man, with the greatest amount of knowledge, of pride, and conceit in his good looks, lacks the power to save them from premature decay, and total destruction;—showing that, in the enjoyment of his artificial comforts and pleasures, he destroys his teeth, his good looks, and often his life, in his thoughtless departure from natural simplicities and instinct.

"Civilized people, who, from their education, are more excitable, regard most exciting, amusing, or alarming scenes with the mouth open; as in wonder, astonishment, pain, pleasure, listening, &c., and in *laughing*, draw pleasure in currents of air through their teeth, by which they insure (perhaps) pain for *themselves*, in their sober moments, and for their *teeth*, diseases and decay which no dentists can cure."

We have thus extracted we believe all the passages from this work, directly referring to the teeth, but we cannot conclude without giving our hearty and unqualified indorsement to the principles he establishes.

The whole question is one of vast importance to the health, happiness, and purity of the human race. If taken simply in regard to the influence of decayed and irregular teeth upon the beauty of the human face, it could not be too carefully considered; and when we remember all the evil results to health, and even to life itself, it appeals to every thinking man, in warning tones of startling meaning.

DENTAL EDUCATION.

By Wm. A. Pease.

If a foreigner, while travelling through this country from east to west, and from north to south, should obtain at the different stations the local papers and read the dental cards, he would form a very unfavorable opinion of American dentistry. On the supposition that a man advertises his highest skill, that he presses upon the public attention the wares or whatever he is the most anxious to dispose of, what yields him the greatest profit, and for which there is the greatest demand, he would think that America is the paradise of dental mechanics; that dentistry, as a profession, has scarcely an existence here; and that, after a certain period of life, artificial teeth are the rule and the natural the exception. If to verify this supposition, to discover whether this most anomalous condition does really exist, he should look around him at the faces on the cars, on the streets, and at the public assemblies, a very little knowledge of anatomy, physiognomy, and the distinguishing characteristics of the different races would convince him that his worst fears were really true. For how, else, could he reconcile the unnatural expression of the faces he would see around him, especially of the women, with the known configuration and expression of face of the Anglo-Saxons, as seen in England, or the Teutons in Germany. How could he account for the faded appearance; the sunken, hollow, flabby, and wrinkled cheeks; the sharp and expressionless mouth; the prominent or protruding chin; the short lips, and that general appearance of premature decay that indicate the loss of the natural teeth? This would be confirmed by the first glance at the open mouth, by the preternaturally small, white, and artificially arranged teeth; unlike the infinite variety of the natural organs, which were arranged by nature, and conform in color and expression to the age and temperament.

Whatever might be his conclusions as to the cause of this condition; whether climatic or degeneration of the race, it is unnecessary to inquire here. It does not, however, arise from any one cause; in part from social habits and imperfect alimentation; but principally, from an unfortunate and erroneous education upon dental subjects. This leads to the inquiry—What has been the education of the people upon dental subjects; who have been their instructors, and whether they were honorable men and competent for the task?

To fully answer these inquiries would open a field of discussion too wide for these pages and this number. The instructors can only be indicated, who are swarming in every city and village, plying their vocation, manufacturing a public opinion that reflects little credit upon dentistry. Here is a fair specimen of the instruction given by these instructors of to-day:

> "Dr. ——, DENTIST. ARTIFICIAL TEETH INSERTED in the various styles in common use—but special attention is called to the new method of using VULCANIZED RUBBER instead of gold. It has now been thoroughly tested, and is confidently offered to the public as cheap and durable, neat and cleanly, light and comfortable, and every way a desirable style of work. Those who need artificial teeth are invited to try it."

A stranger to the mixed practice of such men, after reading their cards and hearing them talk, would suppose that these doctor-mechanics were simply manufacturers of artificial sets of teeth. He would wonder why their names were prefixed by the word "Doctor," so evidently out of place. It is true some of these cards contain, evidently parenthetically, a line like the following: "The teeth are carefully treated and plugged." This, compared with the spirit of the rest of the card; its confident assertion, enthusiastic description, and minute detail, leaves the impression on the reader that their treatment and fillings are of little value in the estimation of the advertisers; and this impression is confirmed, if he knows the wonderful facility their plugs have of coming out.

Accustomed as the public is to exaggeration in advertising, it, nevertheless, supposes that a neighboring professional man would prize his reputation and word, and dislike to advertise in a public journal what was obviously beyond his knowledge and might be incorrect—that he would reflect: "I do not know, and neither does any man, the average duration of sets of teeth on rubber; whether the same as those on gold, longer or shorter; because it has not yet been used extensively so long as the average duration of sets mounted upon that metal; but I do know that many sets have broken after very little use."

I have selected the preceding card as a fair type of those usually found in the public journals; and have thus partially analyzed it, in order to show what kind of instructors the public has and the nature of the instruction it receives; and on what slight foundations such confident assertions are based. They are, in spirit and manner, true tradesmen's cards. For mechanics, they are, perhaps, as unobjectionable as the average of their advertisements; but there is a difference between thus selling wares, that may be of use, and selling services, that, by reason of incompetence, may result in injured health and shortened life. Similar cards are to be found in nearly all of the public journals of the country. They exaggerate the value of artificial teeth, and, by implication, at least, depreciate the value of the natural ones and the efficiency of the means used by dentists for their preservation. Akin to this manner of advertising, is the loose way of conversation and representation common to many manufacturers of artificial teeth. They in some way convey the idea that a set of teeth will last for life; be a permanent fixture. Hence, many people, knowing that mechanics' fillings will have to be frequently replaced, and that eventually artificial teeth will be necessary, neglect to have the decay arrested, thinking they will thereby save the expense and trouble of the operation; and that the loss of their teeth a few years earlier will be of small moment. This opinion lessens the confidence they have in dentistry; for they soon learn that the artificial teeth, on which they have been led to place so much reliance, are, often, inefficient masticators, liable to

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accidents, and that repairs are frequent and expensive ; even if they are not obliged to have their sets replaced, as they feared they would their fillings. To the public, which is but slightly acquainted with what daily passes in a dental office, it may seem singular that so much importance is attached to dental cards or the conversations in the office. But how else is the public learned ; what other instructors has it? Professional dentists advertise but little, and when they do they are satisfied with a simple statement of their residence and business. In the office they give the patient a simple, candid statement of what he wants and what he may expect ; believing that their word is sufficient, they promise nothing—warrant nothing. Thus the influence of a dentist, here and there, is not so great and wide-spread as that of the neighboring mechanics, who advertise extensively ; sometimes personally solicit business from door to door, or village to village,—and by this means keep the great mass of the people ignorant of how much better they might be served by dentists and how unnecessary it is to lose their teeth.—*People's Dental Journal.*

Dayton, Ohio.

EDITORIALS AND CUTTINGS.

DENTAL COLLEGES.

It has always been our duty and our pleasure to write in favor of any system or institution that tended to educate our profession. With the view that education tends to elevate and refine, we have steadily advocated every thing that even in a remote degree presaged that result.

Thus, we have favored the establishing of local and national societies and conventions, where the adult and educated dentist could receive and impart knowledge, and where the general stock of professional information could find its level.

We come now, still pursuing the same vein of thought, to speak of Dental Colleges.

Not many years ago, the only fountain-heads of dental instruction were the laboratory and the chair. At present, all this is changed.

Our profession has its *alma mater*, as tender and careful of her intellectual offspring as the halls of Harvard and of Yale are of their adopted sons.

The young man who elects to follow our profession can now, in his youth and strength, enter our halls of learning, when his faculties are brightest and his aspirations truest, and, at the feet of professors learned in the art and skilful by nature, can inhale draughts of pure intelligence fresh from the spring. And not alone is he filled with theoretical knowledge; every opportunity is afforded him for actual practice, and from the first rudiments of dental science, he can advance by regular gradations, to the most complex applications of the art of healing the diseases, and rectifying the malformations of the teeth. We can illustrate the truth of these statements, by a glance at our own experience. When we first commenced to study dentistry, we were without any of the advantages we have named; without associations, schools, or colleges. All that we learned had to be worked out of our own experience, through years of unassisted toil. Through experiment, and continually tried by accidents and errors innumerable, we arrived at whatever we know.

And our experience is that of hundreds of others who have grown old in the profession.

And thus we had to waste time which was invaluable to us, in obtaining the merest rudiments of knowledge, which are now in the power of every young man to gain, while time is of little value to him.

The information which, in those days, it required years to accumulate, and that but roughly, is now the result of attendance at a couple of courses of lectures and cliniques, running over a few months.

And not only is every thing learned more easily, but it is also learned more thoroughly.

Instead of having to blunder through darkness and doubt, uncertain whether he is going right or wrong, the young student finds himself piloted into the right channel, and with a fair wind, and a strong hand at the helm, soon nears port, heavily laden with a rich cargo of learning and intelligence, ready to be discharged upon the world, from whence it will be returned to him fourfold. And we owe all this advantage to the establishment of Dental Colleges.

In 1839, the first of these institutions was founded at Baltimore, with four professorships. Another at Cincinnati, Ohio, and a third at Philadelphia, complete the list, and are amply sufficient for the necessities of the profession, although efforts have been frequently made to establish one in New York, and it would doubtless be an exceedingly useful and valuable addition to our institutes of learning.

In this specialty we are at present far in advance of our English and European brethen, as we believe they have no colleges of dental surgery, or even dental chair in medical colleges; and the result is shown in the superiority of the profession in this country as a body, to those abroad.

Our professional standing is so much higher, that dentists from this country are able to labor more successfully abroad, than those who are native: and Europeans come to this country, pass through our dental colleges, and, returning to their homes, are able to establish extensive and lucrative practices.

And not from Europe alone: many come from South America, the West Indies;—and not long since we sent home a young man from Constantinople, who graduated at one of our colleges, and returned home fully qualified to operate for the Orientals in the best manner possible.

Even Africa has not been without her representatives among us, for we have thus educated and sent to his home a native of Liberia, paying in this manner a small instalment of the debt which Western civilization owes to that of the East.

The following periodicals have been received regularly since our last issue:—Eds.

Revue Odontotechnique.
L'Art Dentaire.
Deutsche Vierteljahrschrift für Zahnheilkunde.
Chicago Medical Journal.
Transactions N. Y. Academy of Medicine.
Vol. I., No. 1, Dental Times.
Cleaveland's Journal of Health.
Boston Medical and Surgical Journal.
San Francisco Medical Press.
American Dental Review.
People's Dental Journal.
Dental Cosmos.
Dental Reporter.
American Medical Times.
Medical News and Library.

We have also to acknowledge the receipt of No. 1 of the thirty-eighth volume of the American Phrenological Journal, published by Messrs. Fowler & Wells.

The Breath of Life. By Geo. Catlin.

DENTISTRY IN SECESSIA SIXTY YEARS AGO.

From a small book entitled "Richmond in By gone Days," published in that city, in 1856, we select a few paragraphs relative to the state of dentistry in that locality in old times: "Now-a-days the profession of dentistry gives lucrative employment in our city to almost a score of practitioners. In the days of my boyhood, only one *Tooth-drawer*, who probably never heard the word dentist, did all the work and all the mischief in the dental line.

"'Peter Hawkins, Tooth-drawer,' was a tall, raw-boned, very black negro, who rode a raw-boned black horse; for his practice was too extensive to be managed on foot, and he carried all his instruments, consisting of two or three pullikins, in his pocket.

"His dexterity was such, that he has been known to be stopped in the street by one of his distressed brethren (for he was of the Church), and to relieve him of the offending tooth, gratuitously, without dismounting from his horse. His strength of wrist was such, that he would almost infallibly extract, or break a tooth, whether the right or the wrong one. I speak from sad experience, for he extracted two for me; a sound and an aching one, with one wrench of his instrument.

"On Sundays he mounted the pulpit instead of black bare-bones, and as a preacher, he drew the fangs of Satan with his spiritual pullikins, almost as skilfully as he did the teeth of his brother sinners on week-days, with his metallic ones."

THE INFLUENCE OF INTERMARRIAGE BETWEEN NATIONS UPON THE TEETH.

The importance of the subject concerning which we propose to write the present article, is only equalled by the absolute dearth of information that exists in reference to it. The physical results of inter-relations between different nationalities, have long enlisted the attention of scientific men, both generally and specifically; but never in reference to the point upon which we propose to touch; and we have, therefore, a natural diffidence in approaching a subject when we may be considered as groping in the dark for the first principles.

It will, doubtless, be readily admitted by all reflecting minds, that, as a rule, the teeth of the American people are possessed of less vitality, more frequently decay, and are more generally of irregular and abnormal growth, than those of any other civilized nation.

This fact cannot reasonably be attributed to climatic influences, because the Indian tribes all over the continent are noted for the beautiful condition of their teeth, their health and regularity, while they have for generations been subjected to the same influences.

Neither can it be attributed, in any great degree, to our mode of living, because in that respect we do not differ widely from other civilized nations. The question then arises, What is this prolific cause, from which occur such evil and dangerous results? We desire to bring the attention of the profession to this question, with the hope of eliminating such facts as their experience may have collected having reference to it.

When we consider to how enormous an extent our population has always been made up by an aggregate of individuals from all parts of the world, intermingling so intimately by association, that blood relationships are constantly being formed with natives of every quarter of the globe, we cannot but think that this condition of things must necessarily exercise a vital influence over both our physical and mental systems.

That this influence cannot be over-estimated, is proven by the peculiar characteristics resulting from an intermarriage between the negro and the white, as seen in the mulatto, whose physical capacity is so greatly depraved when compared with that of either of his progenitors: and by the same results from the union of the native Indian and white, whose 'half-breed' offspring are without the physical qualifications of either.

It is, of course, well known that the conformation of the jaw differs widely in different nations.

The German jaw, for example, will average one-fourth wider than that of the American: is it not reasonable to suppose that when this formation comes to be allied to one entirely different from it, the result must be what any departure from nature's laws will necessarily induce, viz., deformity, or abnormal structure?

For example, from the combination of the large jaw with teeth proportioned to it, with the small jaw and small teeth, why might we not have in the next generation, perhaps, the small jaw of the one, crowded with the large teeth of the other, and *vice versâ?*

We throw out these questions for information, and we desire to have them answered.

We have considered this subject seriously, and what experience we have had, leads us to believe that these influences to which we have alluded are under-estimated, in our consideration of the causes of decayed and irregular teeth.

We trust we shall hear from the profession in reference to the hints we have thrown out, and our pages are open to any thing touching them.

ORIENTAL BATHS.

We believe that dentists should not confine their time and attention merely to the study of local disorders appertaining to the teeth, but should know something of whatever can be made useful or beneficial to their patients, and, as we have lately come into possession of some useful information which is by no means general, we desire to spread it as widely as possible. Any plan for curing those distressing and serious maladies which so often affect the nerves, must always be valuable to the public and our profession. Neuralgia, *tic douloureux*, and other nervous disorders; rheumatism, gout, paralysis, and many other severe and dangerous complaints are being effectually treated by Dr. Culbertson, Nos. 6 and 8 Fourth Avenue, by the administration of electricity, while the pores of the system are kept open by the action of steam or vapor, as applied in his "Oriental Bath." From experience we can say, that his course of treatment is not only effectual, but exceedingly agreeable in its application. If it were only to experience the delightful sensation of being positively *clean*, we would advise our readers, even if they are not afflicted by disease, to try the baths alone. We have never known any thing to equal them in the healthy exhilaration and tone they impart to the system. Electricity, or other medicaments, can be applied more certainly when the system is in the condition which results from the bath, than in any other manner with which we are acquainted.

VULCANITE.

We continue to receive information from dentists in different parts of the country, of the bad effects of vulcanite. Cases are related where a chronic diarrhœa of a serious character has been supposed to be induced by it. Also a case where acute inflammation and swelling of the glands were produced by smoking a pipe, the stem of which was made of this compound. The difficulty ceased when the stem was replaced by one made of another material.

NITROUS OXIDE.

Since our article on anæsthetics was put in type, we have had a large number of patients to whom we have administered nitrous oxide, and we must say, that its results have been entirely satisfactory not only to ourselves, but to all those who have taken it. When a short operation is to be performed, we consider this anæsthetic one of the best ever yet introduced to the profession. It seems to leave the patient, in from three to five minutes, in a better condition than before taking it. We believe that the world progressed when homœopathy was introduced by the medical profession, as they had introduced something that they were not afraid to take themselves. We are under the necessity of believing that the world still progresses, in a dental point of view, by the introduction of nitrous oxide, as dentists are not afraid to take their own anæsthetic. We must confess that chloroform or ether we were unwilling to take ourselves, and never did to insensibility, and never gave it with entire freedom from apprehension. But nitrous oxide we have often taken for our own satisfaction, without the slightest deleterious effects, and the pleasurable sensations we feel are beyond description. In fact, it renders the much dreaded extraction of teeth a pastime of pleasure and happiness. We refer our readers to Dr. Colton's advertisements.

We are happy to present the readers of the Journal with the following rare gem from the casket of one of our most gifted poets, G. W. Pettes, of Boston. It ought to attract attention, especially from the ladies. We have never seen a dental subject handled with so much classic beauty, and put in numbers so full of sweet rhythm and sparkling thought: A.

AN INCIDENT.

"To cast into my teeth."—Shakspeare.

My friend, who speaks as Hazlitt wrote,
And I, who study men of note,
In earnest, argumentive talk,
To twilight's hour prolonged our walk.
The Poet's passion, Sculptor's dream;
Yes, beauteous woman was our theme.
He told of Helen, pale and fair,
And I, of Ada's raven hair;
Of Kate, whose teeth, so radiant white,
Glistened like pearls in morning light—
Though jet or gold, each chose the curls,
We both paid homage to the pearls;
When suddenly before us stood,
Grace, in the pride of maidenhood.
We puzzled rules of etiquette,
When at the angle sharp we met;
I almost caught her in embrace;
I could not choose but see her face.
Oh! she was lovely as a day
Of beauty in unclouded May.
We looked a moment in the eyes,
Which read our tribute and surprise—
And, "Pardon us, fair maid," we said,
When laughingly she turned and fled.
Alas! that smile, which quick revealed
All that the lips but now concealed;
Sharp points, unevenly disposed,
On which those bright red gates had closed.
How must be mangled honeyed words,
Which pass across that bridge of swords!
Where is the unsophistic youth,
Would catch a Tartar with each tooth?
Oh! Grace, thy feature, form and limb,
May all attractive prove to him;
But not for us the buxom maid,
Whose smile is wantonly waylaid:
Its warders should be pure and good,
To guard its fixed or changing mood;
And where it gleams with radiance bright
Let them reflect its rays of light;
For vain the ruby casket's sheen,
Unless the pearls are set therein.

People's Dental Journal.

W. B. ROBERTS & CO.,

New and most approved style of

Apparatus for Making

NITROUS OXIDE GAS.

When this article was first being introduced for extracting teeth, we perceived that unless the apparatus used for manufacturing it could be simplified, it could not be generally used by the profession. We have succeeded in simplifying it so that it can be all put into a very small space, and carried under the arm to any place desired by a Dentist; and in about half an hour can make Gas enough for ten or twenty patients. (The Gas should not be used until several hours after it has been manufactured.)

Our prices are as follows:—

Retort, Sand-bath, and Washers	**$5.00**
Rubber Bag, Mouthpiece, and Stop-cocks according to size of Bag	**$8.00 to $10.00**
Rubber Reservoir, holding from 10 to 25 gallons or more of Gas, $5.00 or more, according to size of Reservoir	**$5.00**

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Roberts's Material for Continuous Gum Work.

Platina, best French,	at the lowest market price.
Pure Gold, per dwt.	$1 10
Gum Enamel, per oz.,	2 00
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Continuous-Gum Carvers, each	0 15

Roberts's Continuous Gum Furnaces.

No. 1, Large Size, with three muffles and three slides included,	$21 62
Cartage and boxing,	1 75
No. 2, with three muffles and three slides included,	19 44
Cartage and boxing,	1 50
Tongs for furnace, per pair	1 00

Vulcanizers.

Whitney's No. 1 Flask Lamp, &c., complete for use,	$12 00
" No. 2–2 " " " "	13 00
" No. 3–3 " " " "	14 00
Boxing and shipping,	00 25
Hay's, Dr. J., Dry Heater, for 1 case, complete,	10 00
" " " 2 cases, "	12 00
" " " 3 " "	13 00
Roberts's No. 1 Pice, all complete for use,	9 00
" No. 2 " " "	11 00
" No. 3 " " "	13 00
Rubber Base, per lb.,	3 00
Gutta Percha, for impressions, per lb.,	2 00

Files, Scrapers, Flasks, and all articles for the Rubber Base.

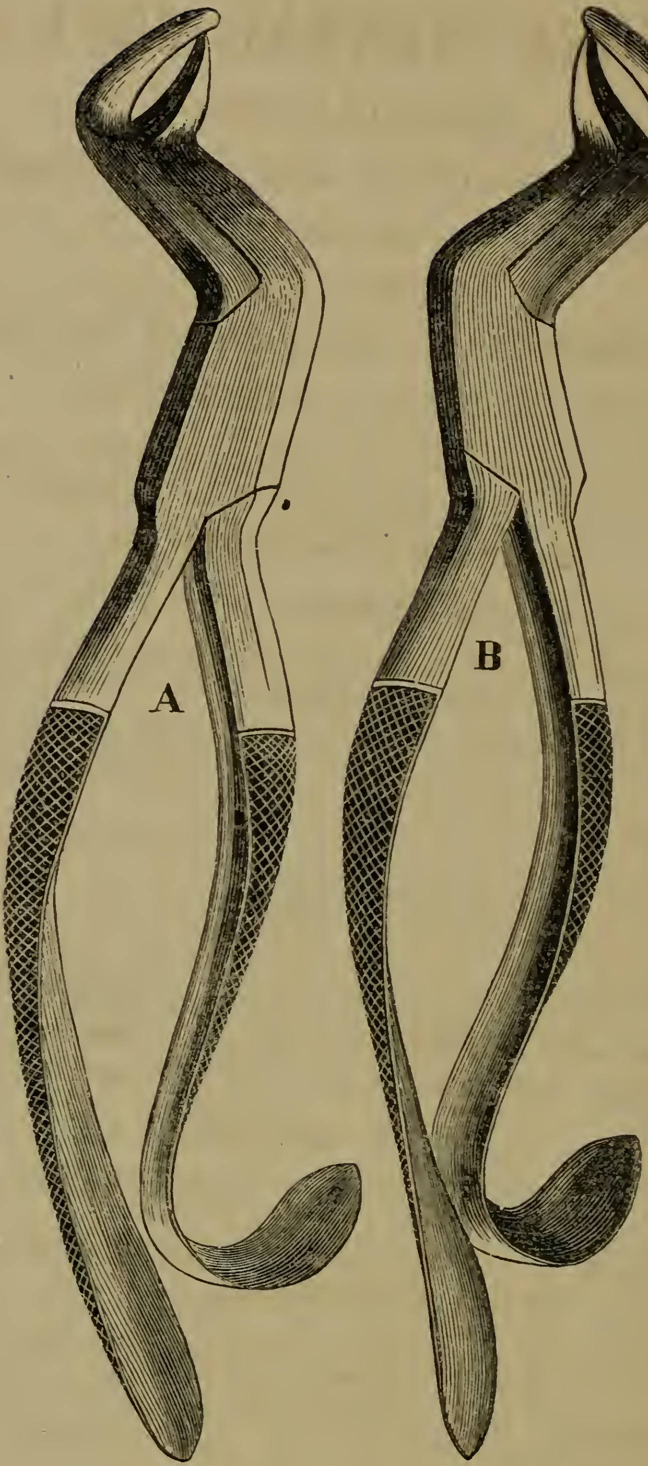
Metals and Minerals.

Gold plate, 18 carats, per dwt.	$0 90
" for clasps, "	0 90
Gold solder, per dwt.,	0 90
Pure Gold, "	1 10
Platina, best French, per oz.	7 50
Silver Plate, per oz.,	2 00
Silver Solder, per dwt.,	0 09
Silver Precipitate, per oz.,	2 00
Townsend's Amalgam, "	1 00
Berhard's, per oz.,	1 50
Bismuth,	1 50
Asbestus, per lb.,	0 38

Tin, lead, zinc, and all other metal at the lowest market prices.

Sundry Articles.

Corundum Wheels,	from $0 10 to	$0 75
Circular Brushes,	from 0 15 to	0 50
Rouge, per package,		0 25
Plate Shears,	from 0 75 to	2 50
Scrapers and Gravers, each,		0 25
Impression Cups, each,		0 38
Horn Hammers,		0 50
Hawes' Flask,		1 50
Hair Brushes,	from 0 6 to	0 75
Melting Ladles, different sizes,	from 0 25 to	0 40
Bone Filling, Roberts's, per box,		1 00
" " Dieffenbach's, "		1 00
Plaster Paris, per quart,		0 06



The above cut represents Dr. W. B. Roberts's Improved Wisdom Teeth Forceps. Price, per pair, - - - - - - - $2 50

Can be had at our Dental Depot, 691 Broadway, New York.

THE

NEW YORK DENTAL JOURNAL,

PUBLISHED ON THE

FIRST OF MARCH and SEPTEMBER.

EDITED BY

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One page, one year,	$10 00	One page, one insertion,	$8 00
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PHILADELPHIA DENTAL COLLEGE.

FIRST ANNUAL SESSION, 1863–'64.

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THOS. WARDLE, D. D. S.,
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J. H. McQUILLEN, D. D. S.,
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Demonstrator of Mechanical Dentistry.

The Laboratory of the College will be open, and preliminary Lectures will be delivered by one of the Professors, every day during the month of October. The Lecture on Wednesday of each week, at 3 o'clock P. M., to be devoted to CLINICAL teaching. The regular Course of Instruction will commence on the first Monday of November, and continue until the close of the ensuing February.

The Lectures will be amply illustrated by the extensive and *valuable* collections of Anatomical, Pathological, and Mineralogical specimens, and the Philosophical and Chemical Apparatus of the incumbents of the various Chairs, and every opportunity will be afforded in the Clinic and Laboratory for obtaining a *practical* knowledge of Operative and Mechanical Dentistry.

FEES.

Matriculation (paid but once)	$5.00
Tickets for the Course, including the Demonstrators' ...	100.00
Diploma	30.00

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IMPROVED

Vulcanizing Apparatus.

THE attention of the profession is respectfully invited to the improvement over all other vulcanizers comprised in the above machine, and also to its great convenience, and adaptability to the necessities of those who desire to do artificial work. The peculiarities of this vulcanizer and its great merits consist in compactness, lightness, strength, and capacity.

It is so constructed that two cases may be vulcanized in it in about two hours, with the most satisfactory results; while, from the peculiar construction of the burner, it is impossible that a sufficient amount of heat should be generated to produce an explosion. Its principal beauty is its simplicity; it is so little complicated that the operator, by correctly following the directions, may leave his case without further attention, satisfied that at the expiration of a certain period of time he can return and find it properly vulcanized.

A great improvement which will be found in connection with this vulcanizer, is my new style of flask. As the top of this flask is cast to the rim, it is rendered much stronger than if they were separate; and as it is fastened by three screws, placed in the form of a triangle, it will be found easy to get just three times as much power as with the old thumb-screw; by these means, also, the flask can be always kept in its place, preserving the articulation, and always securing for the operator a plate of equal thickness, no matter how unequally the rubber may be placed.

This flask is more easily packed than our old pattern; less likely to get out of order; and will contain the largest possible set of teeth, while it occupies the least space.

For strength, durability, and convenience, this flask will be found to be the best ever offered to the profession.

The alcohol reservoir and burner attached to this vulcanizer, have also new and peculiar merits.

By an extinguisher attached to the burner, the amount of heat can be so regulated as to insure absolute safety and perfection in the work. A little arrangement of measuring-cups goes with the machine, consisting of four; the larger, if filled with alcohol, and that emptied into the reservoir, and the second size filled and emptied into the burner, will keep the vulcanizer going long enough to vulcanize the two cases. If this should not prove to complete their vulcanizing, fill the third size, which represents 20 minutes, or the fourth size, representing 15 minutes, and

pour upon the burner. If but one case is vulcanizing, the space of the second must be filled up with water, as there must always be the same amount of matter in the vulcanizer.

This vulcanizer, flask, and alcohol-burner combined, comprise the most perfect apparatus of the kind ever offered to the profession. I desire to call particular attention to the strength of the machine, as attested to in the official certificate appended to this advertisement. After bearing a pressure of three hundred pounds to the square inch (that being all the gauge would indicate), the combined weight of two heavy men was brought to bear upon it without effect; not a screw started; indeed there is no doubt but it would bear without injury any pressure possible to be applied to it. The cover of this machine is fastened by four screw-bolts, secured with strong nuts; the packing is contained in a groove turned in the cover, rendering it absolutely tight and impossible to blow out; while no vapor or odor can escape from it, and it is not disagreeable while vulcanizing, whether in the laboratory or parlor.

When it is considered that less than two ounces of alcohol will vulcanize either one or two pieces, at a cost of one cent and a half; that there is no danger of explosion, and that the result produced is absolutely the very best that can be produced, and that without any care or attention after starting it, the profession must admit that I offer great inducements for purchasing. I am now manufacturing these machines, and am able to offer them to the profession, including stove, cylinder, alcohol-burner, thermometer, vulcanizer, wrench, two ordinary sized iron flasks, and one very large one for extremely large cases; the whole neatly packed in a box 6 x 8 inches in dimension, and shipped to any part of the world for Twelve Dollars ($12). Terms, Cash with orders, in Greenbacks.

The following cuts give an accurate representation of this apparatus.

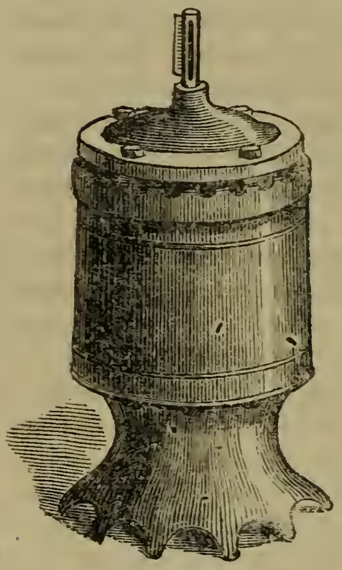

Fig. 1.

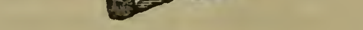

Fig. 2.

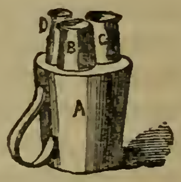

Fig. 4.

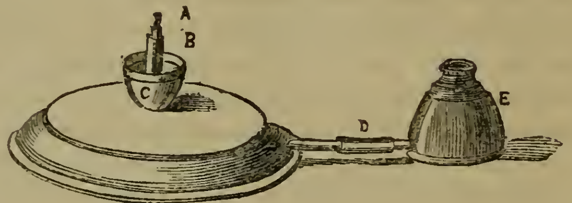

Fig. 3.

Fig. 1 represents the Vulcanizer. Fig. 2, my new improved Flask. Fig. 3, my improved Lamp, Reservoir, and Alcohol-Burner, in which A is the improved compound wick. This wick is an improvement upon my original wire gauze I introduced about five years ago; it is composed of wire and vegetable fibre, twisted into the form of a rope, thus the fibre is protected by the wire, rendering it indestructible, while at the same time it retains all its powers of capillary attraction. B, the extinguisher; C, the cup of the burner; D, the supply-pipe (rubber); E, the reservoir. Fig. 4 is the Measuring Cup: A, being the measure for the reservoir; B, the 30 minute measure for the burner; C, the 20 minute measure; D, the 15 minute measure; the uses of which have been already explained. I may here mention that I am manufacturing my new improved flask in brass, and can supply them at $1 each.

(I would state that my Mercurial Thermometer, furnished with this vulcanizer, is also made on a new principle. By not allowing the steam to fall directly upon the bulb, while it receives the full influence of the heat, I avoid much of the danger of breakage. My thermometer is small, strong, and can be carried in the vest-pocket. or sent in a letter without danger of breaking.)

Directions for Using my Vulcanizer.

Before attempting to vulcanize a piece, it is necessary to gauge the extinguisher (B, Fig. 3) attached to the burner. In order to do this, fill the vulcanizer with water to within half an inch of the top; place the cover on the machine as the marks indicate, and screw down the bolts equally, until there can be no leakage. Now fill the measuring cup (A, Fig. 4) with alcohol, and pour it into the reservoir (E, Fig. 3); next fill the measuring-cup (B, Fig. 4) with alcohol, and pour it into the cup of the burner (C, Fig. 3); light the burner, place the vulcanizer over it, and let it heat up; as soon as the thermometer shall indicate the highest temperature at which your piece is to be vulcanized, regulate your extinguisher by raising or lowering it until the thermometer shall have stood steadily at that point at least thirty minutes. To regulate the extinguisher, remove the vulcanizer and use a pair of pliers; if necessary, the wick can be trimmed with shears.

Now blow out the light and cool off the machine; empty the water out of the vulcanizer, and the alcohol from the reservoir and burner; put in your pieces, refill the vulcanizer with water to within half an inch of the top; put your fresh alcohol in the reservoir and burner as directed above, and the machine is ready for vulcanizing. Always be careful to follow the directions in screwing on the cover. It is only necessary to regulate the extinguisher when a new machine is first used, when some accidental displacement occurs, or when the alcohol varies at least ten per cent. in quality from that last used.

By strictly following the above directions full confidence may be felt in this vulcanizer; and the operator, after setting it to work, can leave it to perform its allotted task, knowing that when the alcohol in the burner and in the reservoir is burned out, his piece will be found perfectly vulcanized.

NOTICE.

In 1858, I made the first one-chambered vulcanizer, cast in one continuous piece of metal, ever manufactured. My specification claims for "casting or forming a vulcanizing steam and water chamber, in one continuous piece of metal." My Patent for the above invention is dated May 10th, 1859.

In 1860 I applied for a patent for a small-sized one-chambered vulcanizer.

My specification for this invention claims "to vulcanize in the same chamber containing the water;" and also for the "use of a fusible metal plug and combination." Owing to the delays of the Patent Office, this Patent was not granted to me until January, 1863.

By my Patent of 1859, I can hold responsible the makers of all vulcanizing machines constructed in one continuous piece of metal, as infringers and trespassers upon my legal rights.

Under my Patent of 1863, I can hold responsible all persons who manufacture machines vulcanizing in the same chamber containing the water, and using my fusible metal plug and combination, either or both.

I therefore warn all manufacturers of vulcanizers to avoid infringing on these my patents, as I shall certainly resist them with the strict letter of the law.

The following is a correct copy of the certificate to the strength and endurance of my new vulcanizer.

Central Department of the Metropolitan Police,

300 Mulberry Street,

New York, *May 2d*, 1863.

"This is to certify that on this 2d day of May, 1863, a copper vulcanizer of E. A. L. Roberts's Patent has been subjected to a hydrostatic pressure of *three hundred pounds to the square inch* (this being all our gauge would indicate), and is safe to sustain a working pressure of two hundred pounds of steam to the square inch.

"B. G. LORD,

" *Captain Sanitary Police.*

"N. B.—Equal to a temperature of three hundred and eighty-seven degrees."

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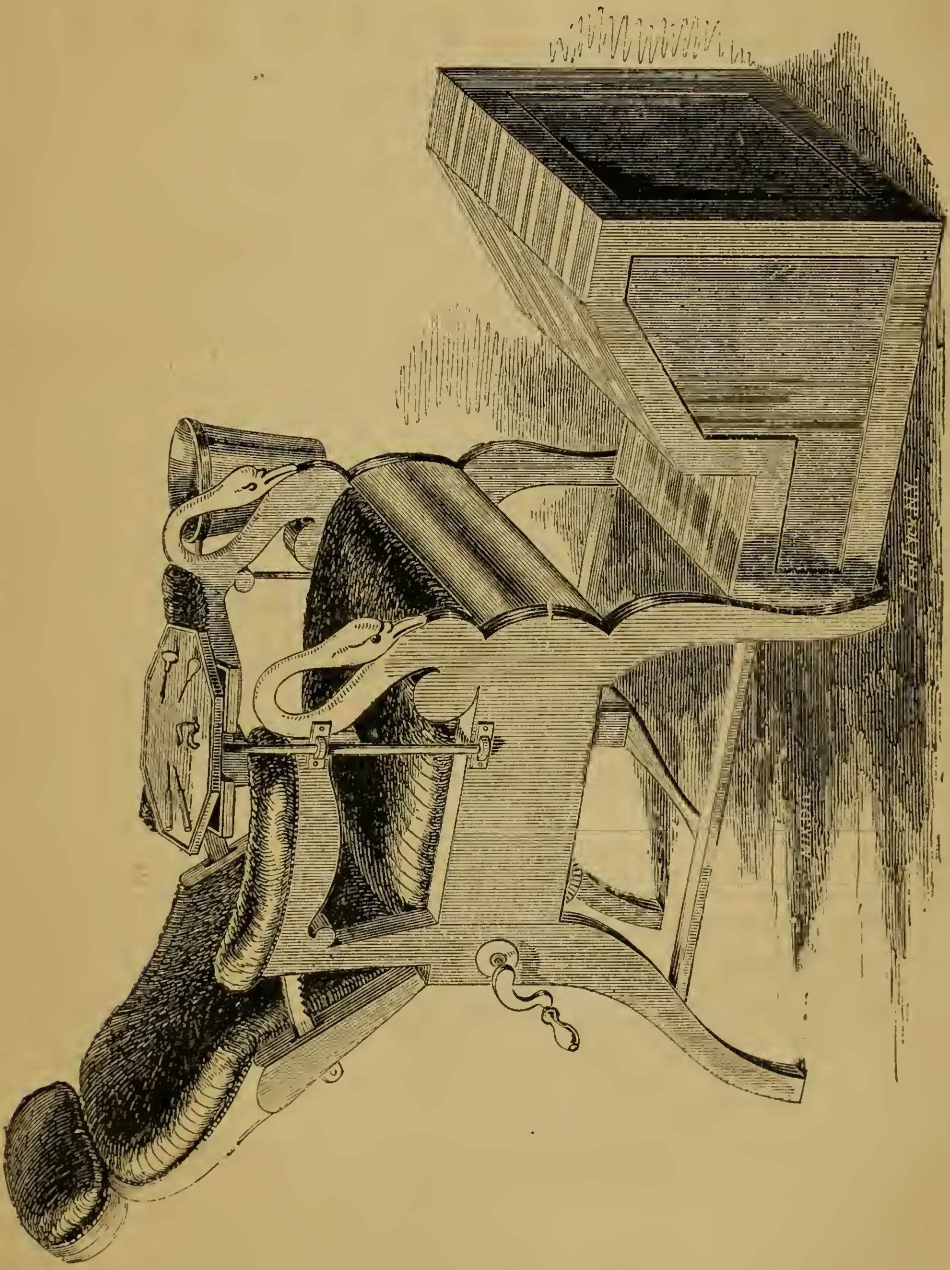

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NEW YORK:
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PHILADELPHIA DENTAL COLLEGE.

BY R. J. HOFFNER, D. D. S.

In compiling the report of the first annual commencement of the Philadelphia Dental College, it may not be amiss to direct attention to the operations of the institution during the session just passed. The founders of the school, feeling that the interests of the dental profession demanded another college, in which those who desired to enter its ranks might be thoroughly and systematically instructed in the various branches constituting the range of dental studies, made successful application to the Legislature of the State for a charter incorporating the institution. The trustees were men of prominence in the State, whose liberal views upon scientific and literary subjects entitle them to act as directors of an educational institution. The Rev. Richard Newton, D. D., President, and R. Shelton Mackenzie, D. C. L., Secretary of the Board, are well known, not only in this country, but throughout the literary world, and their colleagues bear no unenviable reputation in their various positions. After the charter had been obtained, the present faculty were elected. They immediately set to work, with untiring energy, to put the building into proper order for the approaching winter course of lectures,—a labor of no ordinary consideration.

During the month of October, as preparatory to the regular course, a series of preliminary lectures was delivered, upon subjects connected with the practice of dentistry. These consisted of general remarks upon the extraction of teeth; the taking of impressions and of making casts and dies; the consideration of the circulation, of the anatomy and functions of the organs of digestion; anæsthesia; the physical and chemical properties of air; electricity, and other like interesting and instructive subjects.

After the lectures had regularly commenced, the aim of the professors was to make them as practical as circumstances would allow; and to show the manner in which this was accomplished, it may not be inappropriate to give a brief schedule of the operations of each chair.

The professors had, in the first place, spared no pains to collect together an extensive and valuable museum, calculated to meet all the demands of the dental student. These embraced not only normal conditions, but all of the pathological modifications to which the dental organs and their contiguous structures are liable. In addition to these, there was also provided a large and costly collection of apparatus for chemical and philosophical illustration.

Prof. C. A. Kingsbury, the incumbent of the chair of operative dentistry, began his course with the consideration of dental physiology and the description of dentition, with its morbid effects and results. The lectures upon dentition were made the more impressive by an anatomical collection, illustrating the progress of first and second dentition, beginning with the first ossification of the dental pulp, and ending with the loss of the permanent organs, and complete absorption of the alveolar processes. This preparation, for giving a clear idea of the manner in which the teeth are formed and erupted throughout their various stages, cannot be surpassed. The preparation of the cavity for filling, the materials used for that purpose, and the manner of introducing each were not merely described, but the practical demonstration by filling the tooth, made the description plainer by addressing both eye and ear at the same time. True, this is to a certain extent done in the clinic, when one or another professor selects a cavity at random, and fills it before his class. But this does not convey an accurate idea of the manner in which each different position of the cavity should be treated, and it was for this purpose that the professor of operative dentistry preferred to treat each separate case that might arise in dental practice, so far as they could be obtained, and leave no margin for regret upon the part of the student who might otherwise complain of inefficient instruction.

The advantages of this practical method of teaching were markedly manifested in the dispensary of the college, where the student made no hesitation in operating boldly and fearlessly in difficult cases, where previously he had proceeded with doubt and misgiving. The other branches which came within the domain of the operative professor, received the same careful attention, and no opportunity for practical demonstration was allowed to pass unheeded.

It is more particularly to the clinics of the teacher of mechanical dentistry, Prof. Thomas Wardle, that I would direct attention, than to the course of lectures delivered from that chair. But it will not be amiss to notice the policy of this incumbent. He chose rather to refer to failures, and to describe the means of overcoming them, than to dwell upon repeated successes, such as might fall to the lot of any practitioner. With a well-stocked cabinet, he was at no loss for the material, which could be viewed while the description was being given, and an accurate idea of the speaker be thus obtained.

The clinics of the mechanical professors, have, so far as I can understand, always been devoted to special operations upon the teeth, completely ignoring the department which it was their province to teach. Considering that the teacher of mechanical dentistry belonged to the workshop, Prof. Wardle devoted himself to practical instruction in the laboratory, and the processes of making plate and solder, of moulding, carving, and baking mineral teeth were fully explained and satisfactorily demonstrated. For my own part, in the few hours thus spent, I gained a clearer idea of the manner of making artificial teeth than I ever before possessed. It was not of course expected that a demonstration of this kind would do more than give the student a general idea, which was to be followed up by his own manipulations in the same direction, for the mere witnessing of the carving of a set of blocks, or the moulding of single teeth, would be of no more service without the necessary practical experience, than would the witnessing of the operation of filling a tooth be, without a succeeding attempt upon the part of him who desired to learn the process.

In the department of anatomy and physiology, the means for instruction are perhaps as ample as at any of the various medical colleges in the country. Prof. J. H. McQuillen, who occupies this chair, has in his possession both wet and dry preparations for the purpose of illustration, and when necessary the cadaver is also brought into requisition. The functions of the organs were, during the past session, made manifest by means of numerous vivisections upon lower animals, so that the mere assertion of the lecturer should not be the only basis upon which the student was to found his opinion. In the description of the various organs and tissues, a large and valuable manikin, capable of almost complete dissection, served to convey to the mind of the student, the proper conception of that to which he was listening. The organs of special sense, were described from magnified papier maché preparations which contained all the minuter details of these important structures imitated to nature, as nearly as any artificial design could be made.

Comparative anatomy was not neglected; and the application of anatomy and physiology to the practice of dentistry was invariably kept in view. The practical suggestions with regard to position, sound, light, etc., were of no mean importance to him who would satisfactorily practise his profession, and from the special application of the grand laws that govern the intricate structure of the human organism, to every department in which mankind can engage, tended—if such could be possible—to give them an additional interest. Combined with these, the hygienic laws, which conduce to the proper condition of the economy, were taught and dwelt upon, as their importance demanded.

The instructions from the chair of dental institutes, occupied by Prof. J. F. Flagg, were begun with a lengthy consideration of the general principles of medicine in their application to the specialty of dentistry. This naturally opened the way for the discussion upon the diseases of the teeth. The means of illustration in this department are very ample. The models of teeth in plaster, manufactured by Prof. Flagg himself, are carved from specimens deposited in the school, and embrace every disease to which the teeth are liable. These plaster models are twenty or thirty times the size of the natural tooth, and are an important adjunct in class demonstration. As evidence of their not being mere fancies, the specimens from which they were taken are submitted to inspection. By means of these enlarged teeth, their different pathological conditions can be recognized at a glance.

The department of materia medica, attached to this chair, is sufficiently full for all the requirements of the dental student, and received the attention which so important a branch of study demanded.

The teacher of chemistry, Prof. Henry Morton, recognizing that the dentist, as a scientific man, should possess a knowledge of the laws of mechanics, which are every day brought into requisition by the dental practitioner, delivered at the outset of his course, a series of lectures upon the physical forces, applying them to the wants of the dentist in this particular direction. These embraced the subjects of matter, mechanics proper, including hydrostatics, hydraulics, pneumatics, etc., heat, electricity, and light. The proofs of the laws by which the operations of nature are governed, were made apparent by the use of delicate and costly apparatus. The large and valuable Ruhmkorff, or intensity coil, for showing the powerful effects of secondary currents of electricity, was fully described, and the experiments with it were among the most beautiful of the course. An apparatus in use in this department, and which is destined to be of no ordinary importance in demonstration of lectures before a large class, is the oxyhydrogen microscope. In the use of the hand microscope, the number of preparations that can be shown must of necessity be limited, for as but a single person can look at once, the time consumed must be very great. With the oxyhydrogen instrument, however, the image of the object can be projected upon a screen, and be seen by a large concourse, thus saving time and adding to the advantages to be gained by the student. Connected with this instrument is a polarizing apparatus, which is interesting not only from the beauty of its coloring effects, but also from its use in the arts, especially in the direction of chemistry, Inorganic chemistry was taken up after the conclusion of the lectures on physics, and the elementary substances, with their different combinations, were carefully described.

In organic chemistry the consideration of vegetable and animal substances, with the laws which especially govern this department, were placed before the student, so as to open to his mind the hidden beauties which lie concealed within its limits.

But while theory was taught in the lecture-room, it was not supposed that without the practical application of this knowledge, the seeker after truth would be fitted to practise so arduous and responsible a profession as that of dentistry. When, a few years back, it was looked upon almost contemptuously, and considered attainable by one who had spent a few weeks in the office of a practitioner, dentistry had not risen to the dignity which now commands the respect of its acknowledged sister professions. Engulfed in empiricism, it was unable to rise from the position it held, until, through the exertions of men of science, it was disenthralled, and elevated to its proper dignity as a profession. And now that it is advancing, its watchword must be "progress;" and to attain this, the exertions of those to whom its sacred keeping is encharged, are imperatively demanded. The day is not far distant when he who would be held in estimation as a dental practitioner, will find that it can be gained only after a methodical course of instruction within the walls of a dental college.

The medical graduate is the only one whom the law allows to practise his responsible art, and though the charlatan still shields his perfidy under the cloak of his medical diploma, he meets with the contempt of those whose esteem is at all valuable; and dentistry, embracing as it does so wide a range of usefulness, must, to enable its practitioner successfully to combat the various diseases which come under his notice, be protected in the same way; and if the law will not do it, the people, by employing only those on whom they can rely, will compel the empiric to pursue another calling, or properly fit himself to practise his present vocation.

In order that the dental student might gain the manipulation to enable him to meet the various cases which would present themselves for treatment at his hands, the dispensary and laboratory were opened, free of charge, to such as might take advantage of the benefits they would confer; and in this way the student gained that skill in the use of his hand which was to be his stand-by in practice. The operations thus performed were varied in their character, embracing, in the operative department, 1,066 cases. These consisted of the filling of teeth with the various materials used for that purpose; the treatment of exposed pulps, periodontitis, alveolar abscesses, salivary calculus, irregularity, disease of antrum, together with the extraction of teeth and roots. In the mechanical department, the insertion of teeth both upon metallic plates and rubber base, instruction in the manufacture of single teeth and blocks, the carving of teeth, and the various other manipulations in mechanical dentistry occupied the time not devoted to lectures or the special operations upon the teeth. The number of teeth mounted during the past session was 898. Each of these departments is presided over by a demonstrator, whose duty it is to supervise the work being done, and to *show* the student how to overcome the difficulties with which he meets. In this respect, Drs. Ellis and Gorges discharged their varied and responsible duties to the satisfaction of the class.

The class, during the past session of the college, has been small, but this was almost a necessary consequence upon the establishment of a new institution. The indications are already beginning to be very cheering for the ensuing winter course; and no doubt the existence of two schools in Philadelphia will be of benefit to the interests of dental science. Here are centred the medical schools of the country, and the reputation of Philadelphia as an educational centre, will be the means of inducing many to study their chosen profession in our city.

In the above, my endeavor has been to give a brief description of the effort to educate those who are seeking for the knowledge which shall enable them to become active and intelligent dentists, with the hope that it may not be uninteresting to the readers of your JOURNAL, for there is no doubt that many who have heard of dental colleges, have no proper conception of the manner in which these institutions of learning are conducted.

The commencement of the institution, which I desire before closing briefly to notice, took place at Concert Hall, on the 29th of February last. Upon that occasion, there were gathered together practitioners from all parts of the country.

The graduates, six in number, were as follows:

Wm. A. Breen, Pennsylvania, Dental Caries.
Wm. P. Henry, Pennsylvania, Mechanical Dentistry.
Richard J. Hoffner, Pennsylvania, Saliva.
Henry E. Knox, Massachusetts, Dental Caries.
Wm. S. Miller, Massachusetts, Vulcanite.
Ambler Tees, Pennsylvania, Nitrous Oxide.

The valedictory, delivered by Prof. C. A. Kingsbury, was a carefully written and well-digested article. After congratulating the graduates upon their success, he enjoined on them the responsibility they had incurred in the choice of a profession, and urged the necessity for unremitting application, in order that they might keep pace with the rapid advances constantly being made. He mentioned the necessity of cleanliness, of the cultivation of easy manners, graceful deportment, neatness of dress, and the other concomitants which should be observed by the accomplished dentist. The necessity for a connection with an organization which looked to the advancement of the profession, and of taking an active part in the discussions of the day were not forgotten. He referred to the strife in which the country is now engaged, and looked forward to the time when all would again be peace, and when the institution which has so long been the curse of our land shall be with the things that were. After wishing those who went forth as the alumni of the college an eminent success, the speaker bade them farewell. After the commencement exercises, the faculty, board of trustees, class, and invited guests participated in a pleasant and agreeable entertainment at Prof. Kingsbury's residence. Addresses were made by Hon. James Pollock, ex-governor of Pennsylvania, Dr. R. Shelton Mackenzie, Prof. J. H. McQuillen, Dr. W. H. Atkinson, and others.

Gov. Pollock, in referring to the limitlessness of science, regarded it as bound by no State, party, or national lines. It was world-wide in its tendency, and the man of science belonged to no country. He was the world's. His expansive views upon general questions met with hearty approbation, and called forth frequent applause.

Dr. Mackenzie was gratified in stating that though the school had been placed under heavy expenses, there was no debt remaining upon it. He was happy to find the institution in so prosperous a condition, and wittily remarked that if the leader of our army were a dentist he would doubtless better understand how to draw rebellion out by the roots.

Dr. McQuillen having been called on, said that objections had been made to the establishment of the school, on the ground that it would be detrimental to dental education; but he felt assured that he uttered the voice of those present when he stated that such had not been the case. The faculty had endeavored to do *their duty*, not only by delivering the regularly prescribed course, but by repeated lectures in the evenings, to enable them to deal justly by those who had placed confidence in them as instructors.

Dr. Atkinson thought the elevation of the dental profession in a great measure due to the means now employed for scientifically educating those who entered its ranks. He referred to the advantages of associated effort, and urged the necessity for united action upon the part of the profession.

The above is only intended to give a synopsis of the addresses of these gentlemen, their remarks being more at length. The pleasure experienced at Prof. Kingsbury's will no doubt be long recollected by all who were in attendance.

PHILADELPHIA, *March 9th*, 1864.

WHAT OUGHT TO BE READ AND REMEMBERED.

BY WM. A. PEASE.

It is the duty and desire of every honest dentist to preserve the natural teeth. To that end his studies and his labors are directed, and he feels a conscious glow of self-approval, and seems to hear a whispering of "well done, thou good and faithful servant," when he succeeds, and there is a corresponding degree of mortification when he fails. This feeling is his own, a part of his reward, his incentive to exertion; and it is wholly irrespective and independent of the opinion of the patient as to the value of the operation; who little knows or cares for the amount of thought, perplexity, or fear that is constantly occupying the mind of the dentist during many of his operations, so long as *he* is comfortable and subject to little or no inconvenience. It is this fixed ness and intensity of attention, this anxiety, this consciousness of the movement of every muscle or alteration of expression on the part of the patient, while at the same time he is watching every step of the operation, and guarding against every thing that may interrupt or interfere with it, that begets that nervousness to which the dental operator is so frequently subject. This sympathy with the patient is constant, and not occasional, as with the surgeon, though depending as to degree upon the irritability of the patient, or the difficulty of the operation.

These are some of the difficulties and inconveniences attending the practice of dentistry, and they are merely glanced at here, to show that the labors and responsibilities at the chair are not so light or irresponsible as many suppose. The dentist really desires to succeed, and he labors, not only to do his part well, but, also, to induce the patient to conform to all those conditions that are directly or indirectly necessary to success. He knows the difficulties of every case, how much is to be done, what is to be guarded against, whether success is insured by his operation, or whether it is in part dependent upon the care and conduct of the patient. Moreover, he wishes all of his operations to be simple and uncomplicated, because it is less expensive and better for the patient, and more profitable for him. Almost all operators make their greatest profits on average operations; they cannot, like the lawyer, make their highest fees from their highest skill and greatest responsibility. This is wrong, but it is generally true, as almost all difficult cases are undertaken for the benefit of the patient, with little expectation of a pecuniary benefit commensurate with the expenditure of skill, time, and material.

The advantages of average operations to the patient are so decided that I propose to call attention to them. A small cavity is much more quickly and easily prepared for the filling than a larger one; and the tenderness or pain attending the preparation are proportionably less, if not entirely absent, and there is no danger of exposing the nerve. The filling is inserted quickly, with little or no weariness or inconvenience to the patient, the tooth is not mutilated by cutting away a portion to secure it strong, healthy margin for the filling, and the gold does not show, and is less liable to come out from breaking away of parts of the tooth; the patient does not suffer from taking hot or cold drinks in the mouth; there is no danger of subsequent irritation, soreness of the tooth, or gum-boils, and the cost of the filling is small. This is the only way by which permanent fillings can be inserted; and the advantages are so great, that it would seem they could not be lightly disregarded.

The disadvantages of a large filling are precisely the converse of these, plus the danger of more or less injury to it from moisture and inability to control the patient. The dentist takes charge of such cases in the same self-sacrificing spirit that a physician does when a person by self-abuse or neglect has become critical. He does every thing he can to mitigate urgent symptoms, to make the patient comfortable and give him the use of his teeth as long as possible; and he feels a good deal of self-satisfaction in reflecting that his resources enable him to accomplish much. Toothache can be cured, the nerve destroyed and removed from the tooth and roots, its place can be filled with gold, gum-boils can be healed, as well as diseases of the jaw-bone, or new bones can be made to grow, but all of these operations are tedious, unpleasant, and more or less painful; and in most cases are only made necessary by carelessness or neglect on the part of the patient. But, after all this has been accomplished, it is not absolutely certain that pain may not eventually return, or some other form of disease supervene. If people were universally robust and well, there would be little danger of such an accident, but, unfortunately, so many people for whom we operate have impaired health, that the danger, although not imminent, is appreciable. This is especially the case with women—the most healthy of whom are subject to so many disarrangements, which temporarily lower their vitality, that an occasional irritation at the root of a tooth has to be quieted. It is unnecessary to explain why this is so; it is a physiological fact which we must accept as unavoidable, that furnishes another cogent reason why the teeth should not be neglected until they ache or the nerve becomes exposed. Much more might be said upon this subject, but it is hoped that, to those who value their natural teeth, and prize their ease and comfort, this is sufficient.—*People's Dental Journal.*

DAYTON, OHIO.

A LETTER FROM THE EDITOR OF THE "NEW YORK DENTAL JOURNAL."

THE following letter from Dr. Roberts, setting forth the proper materials to be used in filling teeth, and discussing the merits and demerits of the different materials used as bases for artificial teeth, will be read with interest, both by the profession and the public.

The assertion of Dr. Roberts, that gold, when used by skilful hands, is in the majority of cases the best material with which to fill teeth, has been so well demonstrated by years of experience, that it will not be questioned by any intelligent dentist; but the position he assumes with regard to the bases upon which to mount artificial teeth, may admit of some discussion; not that gold, when well constructed, and platinum, when properly mounted with continuous gum, are not the best, but that rubber has no higher merits than are accredited to it by him.

While some of our best practitioners have seldom, if ever used this material, and many of those who were among the first to use it have discarded it, we are of the opinion that there is an occasional case where its use may not only be admissible, but advisable; yet, after having used it more or less for the last four years, we cannot say that we are very warm advocates for its general use. It is a cheap material, and yet it may be questioned whether its cost does not exceed its worth. As it is the public who wear this material in their mouths, it is but right that they should know all the *pros* and *cons* with regard to its merits. We, therefore, give Dr. Roberts's letter, asking for it a careful reading. We shall also be glad, should any of the profession take exception to what he says, if they will give us an article for the next number of the Journal, stating their objections.

We wish to have the merits of rubber as a base for artificial teeth fairly discussed before the people, and then let it stand or fall as it deserves. We may have a word to say in regard to this matter hereafter.

Dr. Allport,—*Dear Sir:* We have watched the progress of the publication which you have the honor of editing, from its first issue with great interest, from the fact that its intention has been to enlighten the public on all subjects connected with dental science; a course which has enlisted our warmest sympathies, and on your success in which, you receive our hearty congratulation.

Such a course is well calculated to result in affording to the people, heretofore comparatively ignorant on this subject, information which they can obtain in no other way.

In so enlightening the world upon the real nature of the services performed by the dentist, you render the task of the operator much lighter and more satisfactory, both to himself and to the patient; as an intelligent and educated patient is much easier to satisfy, and much more agreeable to operate for, than one who from ignorance is always suspicious both of the nature and importance of the work, and the honesty of the dentist, and believes the latter to be capable of taking every possible advantage of him, for the sake of obtaining the highest price for the smallest amount of work.

We have long felt the importance of such a medium of communication between the profession and the public, as your Journal; and we are satisfied that if you go on as you have commenced, you cannot be otherwise than successful yourself, as well as of great benefit to the community.

We have practised dentistry during the past twenty years, and when we reflect upon the matter, it really seems to us as though it had been the object of the profession rather to mystify than to enlighten their patients on the important topics which they have in charge.

Through the columns—editorial or advertising—of the public press, the world is frequently made aware of the most astounding discoveries made by dentists!—of inventions patented by them, in which they possess the sole right!—of improvements which are only known to themselves!—and all this is only a bate to entrap the unwary, and, by imposing on their credulity, to wheedle out of them a few more dollars.

We are sure that by means of the spread of information broadcast through its pages, the "*People's Dental Journal* will, in a great degree, remedy these evils; and we welcome every agent that gives promise of achieving so desirable a result.

By the instrumentality of men who have entered our profession without a proper sense of their duty and responsibility, we have, among many, gained the reputation of being mere mechanics and tooth carpenters, than which no slander could be more untrue. Such men, who are themselves ignorant of the nicer arts, the importance of adaptability to nature, the science of healing and of abating the progress of disease, are the stains upon our calling, which only earnest and unceasing effort can effectually remove. Dental colleges, periodicals and associations have done much to eradicate these evils from our midst; but much remains to be done, and to do it we need the assistance of the public, who are themselves to receive finally the great benefit of the change.

The most important facts necessary to popularize in dental knowledge are, first, how to preserve the teeth from decay, and when seriously diseased, how to arrest the disease and restore them to health, and with what material they should be filled, in order to enable them to perform their important functions properly; second, how and with what composition to replace the dentures when irretrievably lost. In deciding these questions, we shall not enter into a long and tedious argument for the purpose of sustaining any one mode of practice or material, or of condemning any other, but satisfy ourselves by placing the matter before the people in a common-sense way, enabling them to form their own conclusions on just premises.

The first point to be considered is the necessity of obtaining such a material for filling decayed teeth, or for artificial work, as shall be indestructible by the secretions of the mouth. The second consideration, is the adaptation of a filling, or construction of an artificial denture in strict accordance with nature, in the most artistic style, and with the highest finish and workmanship.

The peculiar and unequalled fitness of gold for filling teeth is so well and so generally admitted, that any arguments *pro* or *con* on our part would be a waste of time. All that it is necessary to say is, that the people should be so informed in regard to this matter, that they will be enabled to select the very best operators, in order to secure to themselves the greatest possible benefit from the operation.

For the base of artificial teeth, many materials are used, and consequently the scope for argument is much greater in this department of dentistry; yet we are surprised to find some of the profession claiming perfection for gold, others for silver, platina, or continuous-gum work, or rubber, as the case may be, and thus mystifying the public, who are in a condition of doubt as to which is best, or whether any of them be suitable to the purpose.

We think this mystery can be best elucidated by the use of a little common sense, which is equally available in medicine, law, theology, or dentistry.

In order to place this portion of our subject in the plainest manner before our readers, we will take these various materials *seriatim*, and explain the qualifications and disqualifications of each, for the purposes to which they are applied, basing our statements on the best chemical and medical authorities.

As to gold, the same remarks which we have made in reference to it as a material for filling, will apply to it when used as a base for artificial dentures in a still greater degree.

Gold of the proper quality is so ductile, so absolutely pure, and so adaptable and agreeable to the mouth, that its suitableness to dental uses is never denied. It has been used for many years, and still holds its rank as a material equal to any in use.

The same arguments may be properly used in favor of silver, were it not for its liability to become oxidized by being brought in contact with the secretions of the mouth; however, this metal is but seldom used except for temporary work, and it would be much better if gold were used in its stead.

But the necessity for obtaining some material which more nearly approaches nature, both in purity and in adaptability to the natural contour of the face, acting upon the inventive genius of some of the original thinkers of our profession, led to the discovery of the *continuous gum* based on *platina*, the purest of all known metallic substances, and absolutely impervious to acids. The material of which this compound is made is the finest porcelain, which can be moulded to any shape, and is subjected to such great heat in the process of manufacture that no trace of impurity can by any possibility exist in it.

In these respects we consider this substance to be superior to any other ever used by the profession as a base for full sets of artificial dentures.

As to the few objections which have been raised against this material, those that emanate from the profession may be dismissed with the remark that they are induced by their own incapacity to make it. The standard of scientific and mechanical ability to which it is necessary to rise in order to be able to prepare this difficult and beautiful work properly, is so high, that very few in the profession are able to reach it; and the masses take their revenge by inveighing solemnly against the use of the material which they are disqualified from preparing, and of whose valuable and important properties they have not the slightest conception.

The objection of the public is chiefly against its cost as compared with that of other substances, and to this we answer that, in our opinion, the best material is the cheapest, and that this will always be the best if carefully and properly made.

The question of dollars and cents should never be placed in comparison with the importance of putting a substance in the mouth which shall be absolutely healthy, pure, and innocuous.

The last material used as a base for artificial teeth, which we shall consider in this connection, is vulcanized rubber, more properly known as "*red vulcanite.*"

Under any other circumstances we would not have considered this substance worthy of our criticism; but in view of the fact that in all parts of the country, dentists, with an amount of ignorance almost incredible, and the most astounding effrontery, are advertising it as the best material known to the profession, we cannot do better than make known to the public the true nature of the compound and the deleterious effects it sometimes exerts upon the human system, which may be made patent to any one who will investigate the subject as we have done, in the spirit of truth and justice.

About seven years ago, this article was first introduced into the profession, and we were among the first to use it in our own practice; we can, therefore, speak from experience and knowledge, and not alone from hearsay or the evidence of others, although there is sufficient of the latter to condemn it for general use in the minds of thinking men.

Our attention was early called to the fact that injurious effects sometimes occurred in patients who used it, and our mind was irresistibly drawn to the inference that such effects could only be attributed to its presence in the mouths of these sufferers. This naturally led us to make a strict and careful examination into the nature of the ingredients used in compounding it, which investigations resulted as follows:

We discovered that of the "red vulcanite," commonly used by dentists, no less than one-third consisted of the coloring matter—*bi-sulphuret of mercury*, or the vermilion of commerce; and that the balance was composed of sulphur and rubber in nearly equal parts. Medical testimony informed us that the bi-sulphuret of mercury produces the same effect upon the human system as pure mercury; we also found that in the process of mixing these ingredients, none of their properties are lost; and by actual experiment, that before and after vulcanizing the weight of the substance is the same.

It therefore became evident to us that bi-sulphuret of mercury and sulphur—two substances confessedly injurious to health—were actual ingredients of the material when placed in the mouth; and common sense, as well as science, taught us, that such effects as were perceptible in such mouths, could proceed from no other cause. These effects, as noted in our own experience, and declared by the evidence of many others, were, first, a great absorption of the alveolar and bony substance of the jaw; next, irritation of the mucous membrane; and a condition nearly approaching salivation; then gastric irritation, and finally, the general derangement of health consequent to such abnormal conditions.

All of these symptoms of disease were removed by simply removing their obvious cause—RED VULCANITE; while a healthy condition continued, after replacing it by gold plate or continuous gum.

One cause of these inflammatory conditions under "red vulcanite," is the fact that it is a non-conductor of heat, and this cause, as will be apparent to any physiologist, is sufficient to produce the worst results.

One reason for the unaccountable success of this article, is the fact that it has been backed in its progress by a wealthy and powerful company, which has made it for the interest of unscrupulous and ignorant dentists, through the newspapers and otherwise, to educate the public mind in the belief that it is the best material to be used, thereby creating a popular demand for it, which has compelled many of our best dentists, who absolutely despise the article, to use it. If the public, after being informed in regard to this matter, resolutely refuse to use this article, both the company and the profession would be soon forced to abandon it to its merited fate.

In conclusion, we would state, that if, after this plain and truthful exposition of the various merits and demerits of the substances used for artificial dentures, the public, who alone are sufferers, will permit cheapness to induce them to place in their mouths an unhealthy compound, in preference to pure and healthy substances, they alone are to blame for whatever painful results may occur—the profession may wash its hands of all responsibility—those who, being warned, still persist in their errors, can only thank themselves for the consequences, however serious.

W. B. Roberts,
55 Bond Street, New York.

LAUGHING GAS.

The following is from the *Syracuse Journal*, written by Dr. A. Westcott, in which he discusses Dr. Colton's views pretty closely; yet we doubt whether the presentation of the theory made by Dr. W. will be fully sustained in all particulars by experience, at least, so it seems by the experience thus far attained.—Ed. Reg.

Not long since, several lectures and exhibitions were given at Wieting Hall, by an itinerant lecturer, by the name of Collins, upon this so-called laughing gas.

During their progress, an article as *editorial*, but evidently prepared by Collins himself, appeared in two of our daily papers—and as this publication, and the lectures to which it alludes, seem to have had a wonderful effect upon this community, I propose as briefly as possible to analyze the merits of this gas as an anæsthetic agent.

The editorial is as follows:

"The 'Laughing Gas.'—By invitation, quite a number of gentlemen met at Wieting Hall on Saturday evening to witness a private exhibition of this wonderful gas. Laughing gas, as many of our readers are probably aware, is known in scientific phrase as nitrous oxide. *It consists merely of the elements of the common air*—nitrogen and oxygen—*mixed in a little different proportions.* It has a larger proportion of the life-giving principle, oxygen, than the atmosphere, and *hence*, when inhaled makes one *live much faster* than when he breathes the common air.

"The blood is more rapidly purified in the lungs, rushes more tumultuously through the arteries, quickens the pulse, mounts to the brain and plays riot in the airy chambers of the mind. The individual becomes exhilarated and careless of observation, throws out in word and act whatever is uppermost in the mind. The effect is very pleasing but transitory, and we learn that *there is no possible danger of a person doing or saying any thing which he might have occasion to regret.*

"On Saturday evening we were treated to snatches of songs, bits of oratory, political harangues, and capital dancing. If the audience are as much amused to-night as those present on Saturday evening, the public will call upon Mr. Collins for a repetition of this *laughing entertainment.*"

Now had this speculator in the health and lives of our citizens written this article expressly to show his profound ignorance, not only of the human system, but of every branch of medicine and chemistry, he could not have been more successful; and yet, strange to say, by just such articles as these, backed by a flood of similar *advertisements*, the public are led, nay constrained to believe that this gas is not only always efficient in producing the desired effect, but that it is *always harmless.* From an advertisement now before me, a dentist of Bond street, New York, and one who claims to be at the head of a "*Dental Association*" *bearing his own name*, gives the following *five reasons* why all should use it who wish to become temporarily insensible to pain, to wit:

1st. It is perfectly harmless.

2d. The insensibility is perfect.

3d. It is pleasant to inhale.

4th. The whole time occupied in the inhalation and extracting from three to ten teeth, and returning to *perfect* consciousness, does not exceed *three minutes.*

5th. *It can be given with safety in all sorts and stages of disease!!!*

Now what rational person can, for one moment, swallow such a pill as is here presented—sugar-coated though it be? Who can suppose that any *sound* person, not to say those in the last stages of disease, can be brought into so unnatural a state in "*thirty seconds*" *perfectly harmlessly?*

The two important questions as regards the use of this gas for dental purposes, are these, to wit:

1st. Will it "*always*," or, indeed, generally produce the desired effect, or *insensibility to pain?*

2d. Is it harmless, even in the most judicious hands?

As regards the former question, I have to confess that I have no experience with it "for dental purposes," but having been engaged for six consecutive years, at one period of my life, in practical chemistry, I have administered it from one to two hundred times as a scientific experiment, and I can say that in no instance did I ever see a person under its influence in a fit state to have teeth extracted, or any other surgical operation performed, or even where teeth could be extracted without danger to the *operator*, if not the patient. In these experiments it was given only for its exhilarating effects, and *never* designedly carried (for reasons which we then supposed to be good, and which I shall allude to hereafter), to the point of stupefying the person inhaling it.

This Mr. Collins asserts, among other things, in his editorial, that "there is no possible danger of a person doing or saying any thing they might have occasion to regret." This is by no means my own experience with this gas. I have often witnessed the most pious using the most profane, and the delicate the most obscene language; and the most fastidious persons are liable to cut antics, the mention of which would make them blush when rational. But this is by no means the great object of its use.

The position which I shall take and endeavor to establish by facts and fair deductions is, that it is always dangerous,—not that it necessarily proves hurtful in all cases, but that it would require superhuman skill to tell whether the subject might or might not have some organic defect or disease. But a very short time since, a soldier died suddenly in this city, who had just previously been examined by a medical board and pronounced sound and "able-bodied." So sudden and mysterious was his death, that the woman with whom he was at the time boarding was arrested and imprisoned for his murder. But a post-mortem examination, however, released this woman from prison and relieved the public of all doubt as to the cause of his death. "One lung was found to be entirely destroyed by disease, and the other was nearly consumed!" Now if such mistakes as these were liable to be committed by a board of medical men, intrusted with the responsible duty of selecting fit and able-bodied men for our army, what will be the chances for similar mistakes, by such men as are urging this gas upon the community as "perfectly harmless,"—not one in ten of whom is medically educated or in any way qualified to make such examination?

But, before offering any direct testimony upon this point, let us examine for a moment the logic of this Mr. Collins, who seems to have been the oracle and file-leader of this region, and who for a number of evenings drew large audiences at Wieting Hall, as *a lecturer* upon the *sciences* of this gas. The general ideas put forth in these lectures are rehearsed in the "editorial" above quoted. His explanation of its *harmlessness* and *exhilarating qualities* is thus stated by him:

"*It consists merely of the elements of the common air—nitrogen and oxygen, mixed in a little different proportions. It has a larger proportion of the life-giving principle—oxygen—than the atmosphere; and hence, when inhaled, makes one live much faster than when he breathes common air!*"

In this attempted explanation, the writer has shown himself wholly ignorant of the laws of chemical affinity. He has blended a *mixture* with a *chemical combination*, and drawn his conclusions accordingly, than which, a more absurd and fatal mistake could not be made in any attempt to reason upon such a subject. It is quite true that oxygen in its pure state would be too stimulating for respiration; and hence, as we find it in the atmosphere, it is *diluted* with nitrogen—a gas wholly inert in its pure state. But it must be borne in mind that these gases are simply in a state of *mixture*, as composing the common air,—the nature of neither being essentially changed. Take another example: Oxygen and hydrogen, when merely *mixed*, still retain their gaseous forms and elementary properties, and constitute an exceedingly inflammable and explosive mixture; but when these two gases are *chemically* combined, the result is *water*—a substance wholly antagonistic in all its properties to those of either of its elements. Now it would be just as rational for one to contend, while drinking water, or breathing its vapor, that he was drinking or breathing oxygen or hydrogen, as to say that he was breathing oxygen, when it was chemically combined with any other substance. The universal law of chemistry is, that whenever any two substances are united by chemical affinity, the properties of both are changed, and the result is a third substance differing from either; and that the elements in such compounds cannot act in their individual capacity till a positive decomposition is effected And hence the perfect absurdity of supposing that we are breathing oxygen simply because we may be inhaling something containing oxygen as a chemical constituent. The resulting compound from a union of the most acrid substances is frequently inert. Common plaster of Paris is composed of sulphuric acid and lime; but when these two acrid substances are combined chemically, the result is that perfectly non-corrosive substance known as plaster of Paris.

These examples might be multiplied *ad infinitum*, but I shall offer but one other, which will not only illustrate remarkable changes wrought by chemical affinity between *different* substances, but where an equally surprising result is obtained *by combining the same substances, simply in "different proportions,"* and I can offer no better example than is seen in these very gases—oxygen and nitrogen in the different proportions in which they are capable of being united. Bearing in mind the nature and properties of these two gases, as simple substances, or when they are simply *mixed* as in the atmosphere, let us see what changes are wrought by *chemically* combining them, and in different proportions.

These two gases are capable of being combined in five different proportions:

1st. Oxygen 1, Nitrogen 1=Nitrous Oxide [Laughing Gas].
2d. Oxygen 2, Nitrogen 1=Nitric Oxide.
3d. Oxygen 3, Nitrogen 1=Hypo-nitrous Acid.
4th. Oxygen 4, Nitrogen 1=Nitrous Acid.
5th. Oxygen 5, Nitrogen 1=Nitric Acid [Aqua Fortis].

It is not necessary to describe the peculiar qualities of all of these compounds. It is sufficient to say that while one proportion of oxygen, and one of nitrogen, *chemically combined*, forms the Exhilarating or Laughing Gas, *two* proportions of oxygen, with the same amount of nitrogen, forms the nitric oxide gas, a single inspiration of which would destroy life almost instantly. And *five proportions of oxygen*, with one proportion of nitrogen, constitute Nitric Acid, or aqua fortis—a substance not tolerated by any part of the human system for a single moment.

But our learned champion for laughing gas gives us to understand that the more oxygen we combine with nitrogen, the more exhilarating and healthful it is. The air, containing but one proportion of the former, to three of the latter, he informs us, is not exhilarating; but by placing them on an equal footing in respect to quantity, the result is a most exhilarating and healthful atmosphere! But why stop here? Why, according to his logic, should not nitric acid be *five* times as exhilarating and healthy as nitrous oxide, or Laughing Gas?

The upshot of this whole matter is simply this: No man, however good a chemist he may be, can predict the nature of a compound by any study of its elements,—much less its effect upon the human system. This is to be done, and only to be done by actual experiment. The chemist who first discovered that the combination of one equivaent of each of the two gases, oxygen and nitrogen, constitutes the exhilarating gas, was of course entirely familiar with the nature and properties of both of its constituents, and yet he was doubtless not a little surprised to find the resulting compound was of such a character, nor could his surprise have been less when he found that simply by doubling the amount of oxygen the compound was of a most deadly character as regards its effects upon the human system. There are now three substances in use as anæsthetic agents, to-wit: Sulphuric ether, chloroform, and nitrous oxide—the chemical composition of each of which is as follows:

Nitrous oxide is composed of—Nitrogen 1 proportion, oxygen 1 proportion.

Sulphuric ether—Carbon 4 proportions, hydrogen 5 proportions, oxygen 1 proportion.

Chloroform—Carbon 2 proportions, hydrogen 1 proportion, chlorine 3 proportions.

From the above it will be seen that inasmuch as the effect of each of these upon the human system is essentially the same, no judgment can be based upon their composition as to their nature in this relation. While the nitrous oxide is one half oxygen, ether contains but one-tenth, and chloroform not one particle of oxygen. The question now naturally arises, what is the effect of the nitrous oxide as shown by actual experiment? I answer in general terms of comparison.

It is essentially the same as that produced by chloroform or ether, with at least two drawbacks against it, which I shall hereafter point out. The first effect of any and all of these agents is to produce great and rapid excitement throughout the whole system—the blood-vessels are enlarged, and the blood circulates with nearly or quite double its usual rapidity. When this exhilarating stage has reached its height, a stupor gradually supervenes, and the pulse correspondingly lessens, till frequently it becomes frightfully slow, and weak. Now it is very easy to account for this rapid exhilaration. A stimulant taken into the *stomach*, as ardent spirits, has to pass through the ordinary channels of digestion before it reaches the brain, but this, being absorbed by the blood, as it passes through the lungs, is taken almost instantly to the brain. But as to how it produces its anæsthetic effects, or entire insensibility to pain, is a question far more difficult of solution. There are two theories upon this point; the one accounts for the phenomenon by supposing that the extraordinary amount of blood carried to the brain produces actual compression upon this organ, and that the effect is the same as if the skull were actually depressed, which always produces insensibility.

Prof. Simpson, of Edinburgh, who first introduced chloroform into surgical and dental practice, accounts for this result by ascribing it to its peculiar effect upon the nervous system. He contends that those nerves which control motion are first affected by it, those of sensation next, and that it may under peculiar circumstances reach and paralyze the vital nerves, in which case instant death must ensue.

But it matters very little which theory we adopt, either in regard to its anæsthetic or fatal effects, as the *modus operandi* in producing them is essentially the same in either of the three; and as a legitimate conclusion, it follows that if there is in any given case, any good reason why ether or chloroform should not be used, there must be an equally strong one for avoiding the nitrous oxide gas. Neither of them if pure is, strictly speaking, poisonous, yet each of them will destroy life. My own view of these articles is this: that *any* agent capable of producing so unnatural a state, in so short a time, must necessarily thoroughly test the soundness of all who have this test applied, and if they have any physical ailments or defects, it will be quite sure to find them. It hardly need be added, that the employment of such agents should be confined to those thoroughly skilled in medical science, and at that, used with the utmost caution. In regard to the comparative effect of these three substances respectively, my conviction is, that while the nitrous oxide is by far the most exhilarating, its anæsthetic effects are greatly inferior to either of the others.

In whatever light we may view this "great and new discovery" (which, by the way, was made just 92 years ago), I have yet to see the smallest advantage, in any particular, it has over either chloroform or ether, and there are some objections to its employment as an anæsthetic agent, which do not pertain to either of the other articles. It is well known to almost every school-child that of the air we inhale, nearly eight per cent. is retained in the blood, and that a different and poisonous article, carbonic acid gas, is returned instead, and that oxygen is absolutely necessary to sustain life. Now in the inhalation of both chloroform and ether, a free supply of air is always taken into the lungs, in connection with the vapor of these substances. But how is it with the inhalation of nitrous oxide? This is breathed from a rubber bag (which is of course air-tight), and thus all the carbonic acid exhaled, is returned into the bag to be rebreathed. The gas must therefore, necessarily soon be so contaminated as to become actually poisonous. Not only so, it is true that from the first, oxygen is positively excluded—for, as I have already demonstrated, oxygen, to be available for supporting life, must be free—that any amount of it in chemical combination with other substances, is not of the least account.

It therefore follows that in addition to every objection which can be urged against the use of chloroform or ether, these two must be superadded to nitrous oxide, to-wit: the patient is compelled to breathe more or less carbonic acid gas after the very first exhalation, and moreover an atmosphere totally deprived of the life-supporting principle—oxygen.

At best, no one could live longer, if confined to this gas, than he could live under water, or sustain life without oxygen, and this, as all know, would be but a few minutes. But we are not dependent upon *theory* to exhibit the dangerous effects of this misnamed laughing gas. Facts are coming to us every day which not merely demonstrate its deleterious, but its *fatal* effects.

During the period in which I was in the habit of administering it in the Chemical Laboratory or Lecture Room, several serious cases, and one which came near to proving fatal, came under my own observation, and yet in no case did we intend to carry its effects beyond the exhilarating stage.

The last case above alluded to, was that of a young man, apparently in full health, about twenty years of age, and in all respects seemed to be as good a subject as could be presented for a full dose. He had breathed it but a short time before he became entirely insensible, and apparently lifeless, and it was several hours before he could be fully restored to consciousness, and several weeks before he fully recovered from its effects.

Prof. Amos Eaton, the founder of the Rensselaer Institute, uniformly in his lectures upon this subject, gave the strictest caution relative to its use, and related many instances of its deleterious effects even when prepared and administered by the most skilful and judicious hands.

In a letter just received from an intelligent dentist of a neighboring city, three cases of its bad effects are related, all occurring within the last two weeks. "In one of the cases the patient is still in such a state as to render his recovery doubtful." The lamentable and fatal case of Samuel P. Sears, who was a most estimable man of New York city, and who died within a few minutes after inhaling it, is fresh in the minds of us all.

In view of the nature of this gas, and of such facts as are above related, and many more of a like character doubtless might be collected, I appeal to those who are advertising it as perfectly harmless, to say whether they can conscientiously continue to do so. I have not written this article from any selfish motive, but simply and only from the hope that a candid exposition of the nature and character of this gas might be instrumental in saving some victims from its deleterious, or even fatal effects. A. Westcott.

Syracuse, *January*, 1864.

LAUGHING GAS.

To the Editor of the Syracuse Journal:

I notice in your issue of January 28th, a very long, if not learned, disquisition upon laughing gas, by Dr. A. Westcott, intended to show that it is dangerous to inhale the gas for anæsthetic purposes in dental operations. Now I think, that in much less space than Dr. Westcott occupies, I can convince the public, *and Dr. A. W. himself*, that the nitrous oxide gas is a very safe and efficient anæsthetic.

Dr. Westcott says, in reference to the effects of gas: "No man, however good a chemist he may be, can predict the nature of a compound by any study of its elements, much less its effects upon the human system. This is to be done, and only to be done by actual experiment." And yet in another part of his article the doctor says: "I have to confess that I have no experience with it 'for dental' purposes." Here is a statement and admission, which should have deterred the doctor from committing himself against an experiment about which he knows nothing.

Dr. Westcott says: "In whatever light we view this great and new discovery (which by the way was made just ninety-two years ago), I have yet to see the smallest advantage, in any particular, it has over chloroform or ether." Does Dr. W. mean to say that the anæsthetic effects of nitrous oxide were discovered "just ninety-two years ago?" and yet such is the natural inference from his language. His statement looks very much like an intended deception. If he will consult the report of the "Medical Society of the State of New York," made to the Legislature of 1860, and published in the "Transactions" of the society, or consult a work on "Anæsthesia," prepared by the Hon. Truman Smith, formerly United States Senator from Connecticut, he will see that *anæsthesia* was discovered by Dr. Horace Wells, of Hartford, Conn., on the 10th of December, 1844, at one of my exhibitions of the "laughing gas" given in that city, and that on the day following, I administered the gas to Dr. Wells to test its anæsthetic powers, and that while under its influence, a neighboring dentist, Dr. Riggs, extracted a molar tooth for him without causing pain. This was the first practical trial of *any* anæsthetic for a surgical operation. Dr. Wells made his discovery known to Dr. Morton (his former pupil in dentistry), and continued to use the gas successfully for teeth extraction in Hartford during nearly the whole of 1845, till he went to Europe in December of that year. This is proved by the depositions of Bishop T. C. Brownell and daughters, and some sixty other of the most respectable citizens of Hartford. During the absence of Wells in Europe, Drs. Morton and Jackson, of Boston, began to experiment with ether, (for any person, on discovering that nitrous oxide would produce anæsthesia, insensibility to pain, would naturally suppose that ether would do the same), to test the truth or falsity of Wells's claim. They found it would accomplish the object, and at once applied for a patent for their discovery. This application for a discovery was made in November, 1846, nearly two years after Wells made his first experiment. Before the patent was issued, Jackson assigned all his interest in it to Morton. On the return of Wells from Europe, he finds, to his astonishment, that these gentlemen claim the honor of this great discovery. A discussion commenced between Wells and Morton on the subject, during which Wells died. After his death, those who used any anæsthetic, procured ether, as it could be readily purchased at a drug store; while with the nitrous oxide it required some chemical knowledge and expensive apparatus to make it. Chloroform was not discovered till years afterwards. The editor of *The Medical and Surgical Reporter* of Philadelphia, the highest authority, in referring to a letter of mine in the *Report*, (date January 28, 1864), says: "The facts which he discloses touching the recent use which he has made of the nitrous oxide are of a most remarkable character, and pregnant with consequences which must be fatal to the pretensions of Wm. T. G. Morton. The last named characters have at no time denied the priority of Wells in experimentation, but they have pertinaciously insisted that he failed, and that the nitrous oxide is not an available anæsthetic agent."

And now as to the comparative value, safety, and efficiency of these anæsthetics. There have been recorded *over three thousand deaths* from the use of chloroform and ether, four having occurred within the past month. Patients sink down at once and never recover from the anæsthetic state. Since 1844 I have administered the nitrous oxide to more than twenty thousand persons, having breathed it many times myself, and have never known the slightest ill effects to follow.

Last May I revived the use of the gas as an anæsthetic in New Haven, Conn., and in the space of three weeks and two days, Dr. J. H. Smith, of that city, extracted over three thousand teeth and stumps, for which I administered the gas. In no instance did we fail to put the patients into a profound sleep, and extract the teeth without pain. No ill effects attended the operation. I then came to New York and established the "Colton Dental Association," and have continued the business with the same unvarying success. The dentists of the city, like Dr. Westcott, at first opposed the use of the gas, not because they considered it dangerous, but because they had no faith in its anæsthetic powers. But the thing is all changed now. They have either witnessed its operation, or seen those who have experienced it. But it may be said, "I thought the gas exhilarated—made people dance, laugh, etc." So will ether or chloroform if only a small dose is inhaled. A larger dose induces sleep. The same result follows the nitrous oxide. But ether and chloroform act as a stimulant, and reaction and depression follow, as in the case of all stimulants. Nitrous oxide is *not* a stimulant (so all the books say), and no reaction or depression follows its inhalation. It acts as an *exhilarant* (there is a wide difference between a stimulant and an exhilarant). The anæsthetic effects are due to over exhilaration. It acts no more on the brain than on any other portion of the nervous system.

Dr. Westcott says: "The lamentable and fatal case of Samuel P. Sears, who was a most estimable man of New York city, and who died within a few minutes after inhaling it, is fresh in the minds of us all." As though if he had not been so "estimable a man," his death would not have been of so much consequence! Dr. W. is incorrect in stating that he "died within a few minutes after inhaling it." The facts are that he recovered from the effects of the gas (these effects never last more than two minutes), and did not die till two hours afterwards. The verdict of the coroner's jury was that he died from "congestion of the lungs," and the post mortem examination showed that one lung was entirely gone from consumption, and the other nearly so; that he was liable to die at any moment, an hour before, as an hour after inhaling the gas. No blame was attached to the dentist. *The Medical and Surgical Reporter*, in referring to this very case, says: "In view of the pathological condition of the lungs of the patient, we have little doubt that the same result would have followed the extraction of the tooth if no anæsthetic had been taken. When a person has so slight a hold on life as this man had, so insignificant a circumstance as the extraction of a tooth might sufficiently derange the nervous and circulatory systems as to induce the congestion that caused the death."

Can the gas be administered with safety to persons suffering from nervous debility, where the vital powers are depressed? *The Druggists' Circular and Chemical Gazette* of this city, publishes a report of Dr. Shumard, the medical director of the Danville (Kentucky) Hospital, in which it is stated that "three patients who had been pronounced hopeless (from typhoid fever) by their attending physicians, have been cured. Before giving the gas the pulse was low and the body chilly, but after the gas was administered, warmth slowly returned to the extremities, the pulse increased its volume; delirium, which had existed, disappeared." Dr. Shumard adds: "Nor would I hesitate to give it in any form of disease in which *the vital powers are depressed*, since the cases recorded show that it relieves delirium and irritation instead of producing them."

I presume Dr. Westcott would not put himself above these authorities, although he can and has written a very interesting and learned article on the chemical properties of the gas. The death of Mr. Sears only very slightly affects the use of the gas as an anæsthetic agent in this city, where all the facts are known. We extract scores of teeth daily by this agent. I do not deny that injury might result from breathing an impure article of gas, or even from pure gas improperly administered. Yet I think the liability to injury from this cause, is far less than from the use of ether or chloroform. Whether the dentist who administered the gas to Mr. Sears made a pure article, I do not know, but presume he did.

G. Q. COLTON.

NEW YORK, *January* 30, 1864.

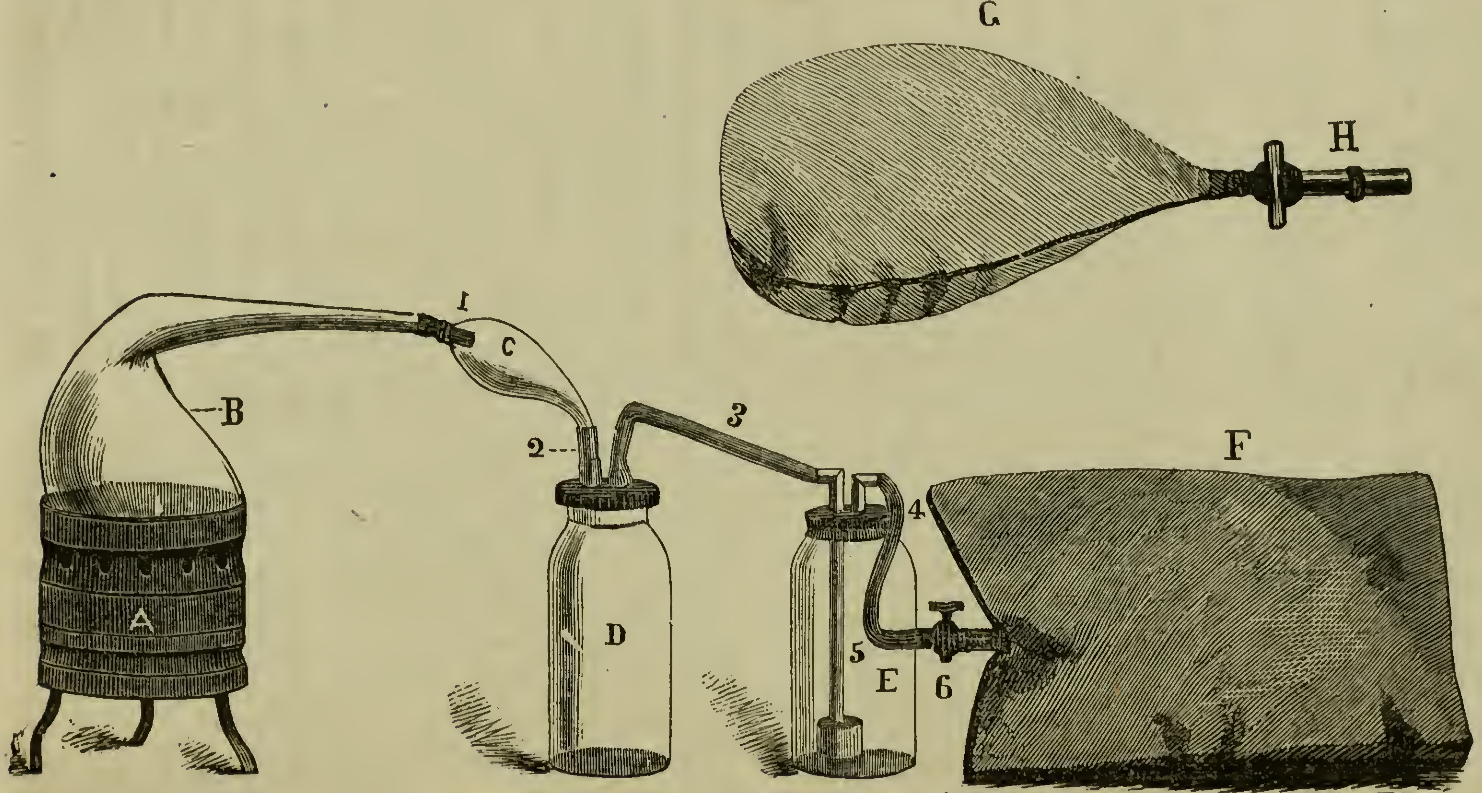
NITROUS OXIDE GAS.

THE annexed cut represents my apparatus for making Nitrous Oxide Gas, and is recommended for its simplicity and ease of transportation; to dentists it will be found particularly useful and convenient, while the absolute purity of the gas, that can be made by it, gives it additional value in the eyes of all careful men.

DESCRIPTION.

A is the sand-bath, B the retort, C a glass tube connecting the latter with a washing-bottle D, E is a second washing-bottle, F the large rubber-bag or reservoir in which the gas is collected and retained for use.

Figures 1, 2, 3, 4 and 5, are rubber-tubes, connecting as follows: Fig. 1 connects the glass tube with the retort; Fig. 2, the same with the washing-bottle D; Fig. 3, the two washing-bottles; Fig. 4, washing-bottle E to the reservoir; Fig. 5 is a washing-tube in washing-bottle E, reaching nearly to the bottom, with a bulb perforated with holes, through which the gas passes, being thus separated in such a manner as to be



Dr. W. B. Roberts's apparatus for generating nitrous oxide, or laughing gas.

more thoroughly washed by the water in E; Fig. 6 is the stop-cock to the reservoir F; G is the inhaling bag, and H the mouth-piece.

To use the apparatus, put from one fourth to a pound of pure nitrate of Ammonia into the retort, and from two to five gallons of water into the reservoir; fill the washing-bottles two thirds full of water, and put in each bottle about two pennyweights of caustic potassa to neutralize any acid that may have passed from the retort. After setting up the apparatus, as in the cut, leave the reservoir unattached to the washing-bottle E, until the heat from the lamp or gas-burner, which must be placed under the sand-bath, shall have expelled the air from the retort and washing-bottles, and gas is generated at figure 4. Roll up the reservoir to exhaust the air, and turn the stop-cock to preserve the vacuum; then attach tube 4, and open the stop-cock, when the reservoir will gradually fill with gas. After filling the reservoir, separate the tube C from the bottle D, that the water may not flow up into the retort. The gas should stand for four or five hours, when it will be ready for administration; the reservoir should be occasionally shaken to cleanse the gas more effectually.

To administer the gas, exhaust the inhaling-bag as directed for the reservoir, and connect it by the tube to the latter; by pressing upon the reservoir, the inhaling-bag will be readily filled after opening the stop-cock; five gallons are sufficient for one operation. In giving the gas, place the mouth-piece in the mouth of the patient, with directions to breathe into the bag; at the same time hold the nose to prevent any air being breathed; from one to three minutes will be sufficient to produce insensibility to pain. Care should be taken to remove the bag as soon as sleep is produced, and the operation performed quickly.

INTERNATIONAL MARRIAGE.

BY W. BYRD POWELL, M. D.

Mr. Editor:

In the Boston *Medical and Surgical Journal*, of the 14th of this inst., I find a contribution, credited to your Journal, entitled "The Influence of Intermarriage between Nations upon the Teeth." With your permission, I will attempt the further ventilation of this subject by the result of forty years of observation.

That international marriage does, in a few instances, result in a mischievous influence on the teeth of progeny, is a fact about which I have no doubt. But, before the fact can be rendered inservient to any use purpose, we must discover the conditions under which it obtains. I have observed that dental forms of disease invariably attend the scrofulous diathesis, when they are not anticipated by some more serious form of disease.

A little more than nineteen years ago, I discovered that the most soundly physiological parties of our respective sexes are very frequently so physiologically incompatible as to entail on their progeny blindness, deafness, idiocy, imbecility, monstrosity, a scrofulous diathesis, or some other abnormal condition; but the scrofulous diathesis is much the most frequent result. The fundamental fact of this physiological incompatibility I have discovered to be a high degree of physiological similitude. But this as frequently happens between those who are greatly unlike in personal size, form, and complexion, as otherwise.

Although it is, I believe, most indisputably the fact, that considerable dissimilitude of constitution between progenitors is indispensable to the production of a sound and viable progeny, nevertheless it is equally true that the constitutional dissimilitude can be as mischievously too great, as in the case of alliances between the sexes of remote species of our race—as between Europeans and negroes; mulattoes are I believe, invariably scrofulous, and consequently they very generally have unsound teeth. All of our States should, with severe penalties, prohibit marriages between our white people and negroes. I would have it known that I have no prejudice against the negro; but I would enforce obedience to the natural laws, because mischief, and mischief only, can result from their infraction.

Our international marriages, with exceedingly few exceptions, are with Europeans, and I am not prepared to admit that the dental infirmities of our people are referable to such marriages, but, to the extent of seventy per cent., to physiologically incompatible marriages;

and this is as likely to be the fact with exclusively American marriages as those which happen between our people and Europeans. And the other thirty per cent. of dental forms of disease I think to be mostly attributable to derangements of the digestive function, and that they are occasioned by the social, political, and industrial anxieties of our people.

Your correspondent alludes to the general soundness of the teeth of our Indians and negroes. I think it probable that I am more acquainted with both our Indians and negroes than he is; but, if I am not, then his observations and mine differ very considerably. The Choctaw, Chickasaw, Creek, and Cherokee Indians have considerably advanced in civilization; and they show it, in the fact that dental forms of disease are about as common with them as with our people. I have three hundred Indian crania, and I much doubt whether an equal number of Anglo-American crania would exhibit more dental disease than they do—and they represent seven or eight tribes; but it is true that the wild Indians, or those who have made no advance in civilization, have sound teeth. To the extent of my observation upon native African negroes, I observed them to have sound teeth; but with reference to the negroes of this country, they are too much civilized to have sound teeth. And why? Because the scrofulous constitution, and also scrofulous forms of disease, greatly obtain in the black population of this country, and for the reason that physiologically compatible marriages are not more common to them than to our white population.

My observations in this relation have been so extensive and numerous, that I cannot honestly say, I doubt that, unless physiologically incompatible marriages shall be prevented by the strong arm of legislation, the Anglo-American people will become extinguished.

In view of the rapid increase of scrofulous forms of disease in our country, and of asylums for idiotic and imbecile children, how is it possible to doubt at least the probability of the opinion I have expressed.

If international marriages ever have a mischievous influence on the teeth of the resulting progeny, it is through some constitutional vice entailed on the offspring; and this is the fact in relation to the only internationally incompatible marriages of which I have had any observation—as those which happen between negroes and white people—these entail a scrofulous diathesis, and this results in dental forms of disease.

Mr. Goodrich, in his Pictorial History of the United States, after speaking of yellow fever and cholera, says: "The scourge of the United States, in every period of their history, especially for a century past, has been consumption. With the progress of civilization and refinement, this disease has increased, and is likely to increase, till the community can be generally enlightened with regard to its numerous causes." The exciting causes, no doubt, are numerous; but neither one nor all of them can produce it, except in constitutions predisposed to it by some remote cause, and for this the medical profession has been looking for more than two thousand years, and at last I have found it. As paradoxical as it may, *a priori*, appear, it is, nevertheless, true, that it originates in purely normal or physiological conditions of progenitors. The remote cause of genuine or true phthisis is the physiological incompatibility of progenitors. This, as a truth, is as susceptible of proof as any truth in etiological science.

Consequently, when our marriages shall be contracted in conformity with physiological law, consumption will cease to scourge our country, and with it will disappear seventy per cent. of our dental forms of disease, and also the existing asylums for the care of idiotic, imbecile, blind, and deaf children, with at least fifty or sixty per cent. of our sterile marriages, and not less than an equal per centage of our vice and crime.

319 West Third Street, Cincinnati, O., *January* 23, 1864.

THE PRESERVATION OF NATURAL TEETH.

Read before the Central N. Y. Dental Association, Nov., 1863.

BY S. B. PALMER, D. D. S.

Mr. President and Gentlemen: When about to engage in any calling or enterprise worth our attention, the following questions should be asked, and, if possible, a satisfactory answer obtained, before proceeding by way of experiment—subject to loss of time and money by repeated failures and unsuccessful results:

1st. How important? How much real benefit can be derived from the undertaking, if successful; and what will be the result, not only to ourselves, but to those connected or associated with us?

2d. Do we possess the knowledge, skill, ambition and means, to warrant the undertaking?

As members of the dental profession, we to-day stand in nearly the same position, and should be prepared to answer similar questions.

The subject before us is of immense importance to every one; it is the cause of much thought and anxiety from youth to old age, and should contemplate the highest aim and engage unyielding perseverance from every member of the dental profession.

The first question—How valuable are natural teeth?—is the subject of this essay.

The second query—Do we possess the knowledge and skill necessary; or do we understand all that is known of the various means and agents employed to arrest disease and assist Nature, in retaining those valuable organs so intimately connected with the well-being of the human race?—remains to be answered by the members of this Association who are willing to contribute to a general fund of knowledge for the benefit of each and all.

It is not our design to present the various causes which have influenced or produced either caries or an abnormal condition of the teeth; but to take into consideration the design of Nature in forming those organs and the importance of their preservation.

We believe that mankind was created physically sound; that each member of the organization was capable of performing the office assigned it. We cannot so reflect upon the Author of our existence, as to say or believe that man was an exception in the whole animal creation, thus to differ from the lower animals, by being compelled to have portions of his frail body drawn asunder, or, by a still more tedious process, submit to time, aided by disease and decay, to effect the same object, and thus cut off one organ after another, until humanity becomes almost disorganized—"diseased—decaying, dying, and still living." Such is man.

Who will not say that man, so far as this life is concerned, pays a heavy tax over the inferior creation for his much-boasted reason?

No—we cannot charge this misery upon our Creator; and if we cannot, then do we admit that the dental organs were originally perfect, as were the other organs of the body;—which again implies that by depraved habits or indulgences, and physical transgressions, this lamentable evil is entailed upon the human race.

As well might Old Time with his scythe commence clipping off the extremity of our limbs, and thus, inch by inch, dismember our bodies, as to commence, by decay, upon the frame, machinery, or grinding apparatus of the dental mill, from which our bodies receive subsistence.

We may regard our physical organization as a chariot in which the soul is travelling, while on the journey of life. Sad as the thought may be, many of those chariots are weak and frail,—in constant danger of breaking down. From this fact, and to correct in some degree this evil, has the science of dentistry been developed.

Dentists and physicians are but artisans called into requisition to lift at the wheels and strengthen the weaker portions, and supply the lost parts of this chariot, that it may remain sufficiently strong to reach the journey's end.

It is a saying in mechanics, that a machine is no stronger than its weakest part. So with man; however strong and healthy, deprive him of properly prepared food, and the result is the derangement of the whole machinery of the physical organization, which is always the case with bad teeth or imperfect mastication.

The teeth appear to be the first organs attacked by the "King of Terrors." In youth may be seen the marks of the destroyer; which rapidly increase with advancing years, until it has become a rarity to witness any thing like a perfect, natural denture at an advanced age in life.

The dental profession is called upon to correct this growing evil. Various means are recommended and adopted to meet the demands.

While some of the profession are willing to admit that our Creator knew best how to make man, and are desirous to assist with all the skill they possess in correcting the evil brought upon the race by transgressions, and thus preserve the type; others appear to have lost confidence in the skill of the Great Creator of the human family as relating to the dental organs, and devote their whole energies in the transformation of man to manikin.

We would as soon charge a surgeon with unnecessary amputations, because he was known to have an interest in an artificial-limb manufactory, as to charge a respectable dentist with extracting teeth that he knew could be preserved and rendered serviceable, for the simple reason that he might obtain his fee for replacing them with artificial substitutes.

And yet with dentists there is a vast difference of opinion as to the real value of *natural* teeth; also, in their confidence of success, or willingness to undertake their preservation; when cases are presented for examination, consisting of a mere remnant of a *once* beautiful arch, with here and there a tooth standing sentry-like, surrounded by disease and attacked by decay.

While one, not understanding the diagnosis of the disease, would refuse to prescribe remedies without first removing all exciting causes, and perhaps recommend extracting sound teeth from diseased gums, another, who had made that branch a specialty, could, by the light of science, "see the end from the beginning," would regard the case both simple and curable.

While one operator may adopt as his rule, the extraction of frail teeth, and those with exposed nerves; another would be prepared to offer consolation and final restoration, by the application of proper remedies and the skilful use of the plugger.

One may feel proud of his attainments and success in the treatment and preservation of natural teeth, and spend his time and energies at the operating-chair; another may feel equally as proud of his artificial substitutes and the mechanical productions of his laboratory.

When a surgeon is consulted in cases of diseased or fractured limbs, to decide between preservation, or amputation, to the patient such decision is of great importance; and when the ability to decide correctly is called in question, the case is referred to others.

Why so much pains-taking? Because doctors have been known to disagree.

Many of the cases presented to dentists, relating to the teeth simply, require as nice points of decision as though the same was to determine the fate of a limb; and yet so little is thought of the matter that even the most trifling circumstances turn the scale. Why is this? Because not only the community, but many dentists, undervalue natural teeth.

" The teeth of inferior animals appear to fulfil their design, by mastication, offensive and defensive operations; while with man, who is alone endowed with speech, the teeth act an important part in controlling and modulating the voice—in giving beauty and expression to the countenance—symmetry, fulness, and boldness of outline to the surrounding parts—that cannot be obtained by artificial means."

Did every person believe that a natural tooth, when retained in the mouth in a healthy condition, was worth fifty dollars—then would they feel that they had made a good investment, when, by the payment of two or three dollars, one such organ had been restored from decay and rendered artificially sound. When, at the commencement of the rebellion, which is now measuring strength with our Government, we read that a few of our brave volunteers had fallen in defence of our country, we were pained and saddened. Strange as it may appear, by the almost weekly addition of hundreds to the list of the dead, human life appears of less value,—so that the intelligence that a hundred or even a thousand as brave as the first have fallen, we remember it but a few days, and are ready for more startling news.

So with the loss of teeth, though a great misfortune, but little is thought of it, on account of its frequent occurrence and the exceeding low prices for substitutes.

The painful operation of submitting to the extraction of teeth, together with the high price of artificial dentures, caused many in former years to resort to a less painful and expensive operation,—that of preserving their natural teeth by filling.

But since the introduction of rubber, and with it *rubber workers*, to the profession; since people are called upon to patronize certain doctors who offer to insert full sets of teeth for seven or eight dollars—travelling expenses and board included—natural-teeth stock went down.

And now, gentlemen, let us beware, since the application of nitrous oxide gas as an anæsthetic, by which tooth-extracting is said to be rendered a pleasant pastime, that there is not a greater depreciation in the value of natural teeth.

We would not be understood to say that all natural teeth could, by any means, be preserved for beauty or usefulness; yet we know that many valuable ones are daily sacrificed, that by skilful treatment could be retained for use.

Let us not only try to educate each other as to the best means of preserving teeth, but try and instruct our patients to understand that they also have an important part to perform for their own benefit, in the bestowal of care, cleanliness, and close examination.

MEETINGS OF SOCIETIES.

American Dental Convention.—The tenth annual session will be held at Detroit, Mich., commencing Tuesday, August 2d, 1864.

Order of Business.—1. Reading the Constitution, and admission of members; 2. Reading the minutes of last Convention; 3. Reports of officers and standing committees; 4. Election of officers; 5. Retiring President's Address; 6. Induction of officers; 7. Reports of special committees; 8. Miscellaneous business.

Order of Discussion.—1. The best means of improving the practice and elevating the profession of dentistry; 2. Anæsthetics—their proper use and relative value; 3. Extracting teeth: when it should be done and when not,—the best instruments for the purpose and the subsequent treatment, when any is required. 4. Absorption of alveolar process—causes and treatment; 5. Filling teeth: the relative value of different materials, and the mode of operating in difficult cases; 6. The best method of obtaining accurate impressions and models of the mouth; 7. The relative value of different materials as a base for artificial teeth; 8. Miscellaneous.

All written communications must be read to open the discussion of the subjects to which they relate, and must not occupy more than fifteen minutes in the reading.

No member shall speak more than ten minutes at one time, nor more than twice on the same subject, without the unanimous consent of the Convention.

The subjects selected for discussion are unusually practical, and are designed to elicit the results of actual experience and observation, rather than theories and speculations, which are better for the seclusion of the study than for public assemblies.

All dentists in regular practice may become members of the Convention, and all such are hereby invited to attend.

L. W. Rogers, Utica, N. Y., A. W. Kingsley, Elizabeth, N. J., J. A. Watling, Ypsilanti, Mich., A. Hill, Norwalk, Conn., H. A. Smith, Cincinnati, Ohio,	*Executive Committee.*

The American Dental Association will hold its fourth annual meeting at Niagara Falls, on Tuesday, the twenty-sixth day of July next, at 10 o'clock A. M.

C. R. Butler,
Corresponding Secretary.

Reissue No. 1444.

THE UNITED STATES OF AMERICA.

To all to whom these Letters Patent shall come:

Whereas, Edward A. L. Roberts, of New York, New York, (Assignee of himself and William J. Demorest, of same place) has alleged that said assignors invented a new and useful improvement in apparatus for vulcanizing rubber, &c. (for which Letters Patent were issued to said Assignors dated May 10th, 1859, which letters having been surrendered by said Assignee, the same have been cancelled and new Letters ordered to issue to him on an amended specification), which they stated had not been known or used before their application; had made oath that they were citizens of the United States; that they did verily believe that they were the original and first inventors or discoverers of the said improvement, and that the same had not, to the best of their knowledge and belief, been previously known or used; said Assignee having paid into the treasury of the United States the sum of thirty dollars and presented a petition to the Commissioner of Patents signifying a desire of obtaining an exclusive property in the said improvement and praying that a patent may be granted for that purpose.

These are therefore to grant according to law to the said Edward A. L. Roberts, his heirs, administrators, or assigns, for the term of fourteen years from the tenth day of May, one thousand eight hundred and fifty-nine, the full and exclusive right and liberty of making, constructing, using, and vending to others to be used, the said improvement, a description whereof is given in the words of the said Edward A. L. Roberts in the schedule hereunto annexed, and is made a part of these presents.

In testimony whereof, I have caused these Letters to be made Patent, and the seal of the Patent Office has been hereunto affixed. Given under my hand at the city of Washington, this thirty-first day of March, in the year of our Lord one thousand eight hundred and sixty-three, and of the Independence of the United States of America, the eighty-seventh.

L. S.

J. P. Usher, *Secretary of the Interior.*

Countersigned and sealed with the seal of the Patent Office.

D. P. Holloway, *Commissioner of Patents.*

THE SCHEDULE REFERRED TO IN THESE LETTERS PATENT AND MAKING PART OF THE SAME.

To all whom it may concern :—Be it known that Edward A. L. Roberts and William J. Demorest, of the city and State of New York, are the inventors of a new and improved apparatus for vulcanizing India-rubber and other vulcanizable gums, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making a part of this specification.

Fig. 1 is a vertical section of such apparatus, and

Fig. 2, is a plan of the arrangement of the diaphragms, hereafter referred to.

The *general nature of the improvement is the production of a compact and portable apparatus, for vulcanizing various articles of India-rubber, gutta percha, etc., and more particularly where small articles are to be vulcanized.* A is a cylindrical stove, having its grate, *g*, and door for supplying coal, K, near the bottom. The upper part of the stove is open to receive the lower part, B, of the chamber, B, C, which part, B, contains the water for generating the steam, and which extends down some distance from the chamber, C, for the double purpose of giving sufficient room for the water and also sufficient heating surface to the same.

The stove, A, has two flues, *e* and *f*, leading therefrom, and an additional door, *d*, to regulate the heating and cooling, as hereafter more fully explained. C is the vulcanizing chamber and forms a part of the steam-generating chamber, B, being all cast or formed in one, and, making, in fact, a continuous single chamber. By this method of construction, forming the steam-generating and vulcanizing chamber in one, and from the same continuous piece of metal, without joint or connection between them requiring the use of bolts, screws, or their equivalents, and packing to connect the parts together, all the expense and difficulty of making such a connection between the parts and keeping such a joint steam-tight, is avoided and saved, and all danger of any escape of steam by means of any such joint is removed, and the vulcanization is rendered more certain and perfect. As vulcanization is necessarily performed at a considerably high temperature and under a good deal of pressure, it is difficult, where joints exist, to keep them steam-tight. By making the parts B and C all in one, the whole expense of construction is also very much reduced.

Between that part of the chamber, B C, which is above designated as the steam-generating part, and that called the vulcanizing chamber, are three annular plates or diaphragms, *a*, *b*, *c*, which are thin metallic plates placed a little distance from each other, and resting on projections or supports adapted to receive them. These plates are each perforated with three holes, and are so placed that the openings in one are covered by the plate above it, Fig. 2, so that the steam will readily pass up through such openings, but the water or spray will not pass up, but will be deflected back by them.

The upper part of the chamber, C, is furnished with a man-hole plate, *h*, or cover for the purpose of giving access to it in charging and removing articles therefrom.

The pressure of steam is determined by a valve, *g*, or its equivalent, placed in any part of the chamber C, and the height of the water may be learned by a cock, *n*, which should be placed a little below the point at which rests the lower diaphragm, *c*. In the vulcanizing process, a temperature uniform or nearly so, of about 300° is essential; to secure this, some means of regulating the heat is necessary. In the use of a stove, such as is above described, and is shown in Fig. 1, when the door, *d*, and damper, *f*, are closed, and the flue, *e*, is open, the full force of the draught is directed up around the lower part of the chamber, B, C, and into the flue, *e*, thus from the surface exposed heating the part, B, as rapidly as may be desired. When, however, by the thermometer, which should always be attached to the chamber, it is found that the heat is too great, and it is desired to reduce it, the door, *d*, and the damper *f*, are opened, and the flue or damper, *e*, is shut, this causes a rush of cold air downwards upon the surface of the part, B, and into the flue, *f*, which rapidly cools it. Cooling auxiliaries are made use of when sudden cooling is necessary, by the use of water on the outer surface of the chamber, applied with a sponge or in any convenient way.

The chamber, B C, may be made of an uniform diameter, if for any reason desirable or more convenient; and its parts may be reduced in size without interfering with its operation. And it may be heated in connection *with a stove of different* construction from that above described, or by any suitable heating process.

The construction of the steam-generating and vulcanizing chamber, B C, forming them all in one, from the same piece of metal, without joints, or requiring connecting together (except at the man-hole or cover) is however an essential feature of the apparatus, for the reasons mentioned. The whole apparatus can be made very compact and portable, and the chamber, B C, can be readily removed for cleaning or for any other purpose.

What is claimed as new, and is desired to be protected by Letters Patent, is,

1st. The general arrangement of the stove, A, and steam-generating and vulcanizing-chamber, B C, substantially as set forth.

2d. Constructing the steam-generating and vulcanizing chamber or chambers in one, or in a continuous chamber, substantially as described.

3d. The combination and arrangement of the diaphragms, *a*, *b*, *c*, in connection with the steam-generating and vulcanizing chamber substantially as and for the purposes set forth.

E. A. L. Roberts.

S. D. Law,
G. W. H. Halsey, } *Witnesses.*

No. 37,523.

THE UNITED STATES OF AMERICA.

To all to whom these Letters Patent shall come:

Whereas, Edward A. L. Roberts, of New York, New York, has alleged that he has invented a new and useful Improved Vulcanizing Machine which he states has not been known or used before his application, has made oath that he is a citizen of the United States, that he does verily believe that he is the original and first inventor or discoverer of the said invention, and that the same hath not to the best of his knowledge and belief been previously known or used; has paid into the Treasury of the United States the sum of thirty dollars, and presented a petition to the Commissioner of Patents signifying a desire of obtaining an exclusive property in the said invention, and praying that a patent may be granted for that purpose.

These are therefore to grant according to law to the said Edward A. L. Roberts, his heirs, administrators, or assigns, for the term of seventeen years from the twenty-seventh day of January, one thousand eight hundred and sixty-three, the full and exclusive right and liberty of making, constructing, using, and vending to others to be used, the said invention, a description whereof is given in the words of the said Edward A. L. Roberts in the schedule hereunto annexed, and is made a part of these presents.

In testimony whereof, I have caused these Letters to be made Patent and the seal of the Patent Office has been hereunto affixed. Given under my hand at the city of Washington, this [L. S.] twenty-seventh day of January, in the year of our Lord one thousand eight hundred and sixty-three, and of the Independence of the United States of America, the eighty-seventh.

J. P. Usher, *Secretary of the Interior.*

Countersigned and sealed with the seal of the Patent Office.

D. P. Holloway, *Commissioner of Patents.*

THE SCHEDULE REFERRED TO IN THESE LETTERS PATENT AND MAKING PART OF THE SAME.

To all whom it may concern:—Be it known that I, Edward A. L. Roberts, of the city and State of New York, have invented a new and improved Machine or apparatus for vulcanizing India-rubber, Gutta Percha, &c., and I do hereby declare that the following is a full, clear, and exact description thereof, and of its construction and mode or manner of operation; reference being had to the accompanying drawings, and to the letters of reference marked thereon; making a part of this specification.

Fig. 1 is a general view of the machine and of the parts connected therewith.*

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* We omit all the drawings in these patents for want of room. It is of little importance, as the profession is familiar with the machine described.—Eds.

Fig. 2 is a sectional view of the machine or apparatus.

Fig. 3 is a bottom view of the vulcanizer.

The nature of my invention or improvement consists in producing a vulcanizing apparatus, *which is compact in form* and particularly adapted for dentists' uses, or when small articles are to be vulcanized, and *by which the vulcanization can be produced or effected in the same chamber or vessel in which the water used for the vulcanization is contained*, *and by which the operation can be produced with a trifling expense for fuel*, and the heat perfectly controlled and regulated as desired.

The lower part or stand, A, contains the burner, which is arranged like those used in ordinary gas stoves; or it may be a wick, when a lamp is used. Upon this rests a hollow cylinder, B, which should be lined with some non-conductor plaster, and asbestos is easily applied and will be lasting, so as to prevent the radiation or escape of the heat. In this may be placed a door, C, for the admission of cold air when necessary.

Within this cylinder is placed the vulcanizer, D, which is a hollow casting or other metallic vessel of a single piece, except as to the cover, E, which is fitted to a flange upon the upper part of D, and to which it is firmly fastened by the screw-bolts 1, 2, 3. In order to make the joints between the two steam-tight, a ring of vulcanized rubber or other packing is inserted between them.

In the cover, E, is fixed a thermometer, F, to indicate the temperature of the steam within the vulcanizer, which is made strong enough to bear at least double the pressure required to effect the process of vulcanizing. In order, however, to guard against danger or accident, there is inserted in the cover, E, a fusible plug, *a*, which fuses at a temperature considerably less than the vulcanizer will sustain, but not at any temperature required for vulcanizing; or a fusible metallic packing may be substituted for such fusible plug. Such fusible plug or packing may be made of equal parts of tin and lead, which melts at about 400°, or it may be made of two parts of tin and one of lead, which will melt at about 360°, either of which is higher than the temperature necessary for vulcanization. The component parts or particular proportions of such alloy may, however be varied—as it can be made of different metals and these mixed in different proportions—it being only necessary that it should be capable of readily sustaining a temperature of about 300° proper for vulcanization, but melt from 50° to 100° above that point.

The advantage secured by the use of a fusible plug, instead of a safety-valve, is this, that, in order to secure perfect and effectual vulcanization, it is desirable that the vessel in which the vulcanization is being performed, should be perfectly steam-tight; this end it is very difficult to attain by the use of an ordinary safety-valve, while it is easy to so fit a fusible plug or packing that it shall be entirely steam-tight, and at the same time afford all the protection of the safety-valve.

The action of the machine in effecting vulcanization, is not, however, in any way dependent upon or affected by the presence or absence of either the fusible plug or packing, these being added merely for the greater safety of the operation.

The bottom of the vulcanizer may also be corrugated, as shown in Fig. 3, so as to give an increased surface to be exposed to the heat, and quicken the whole operation of vulcanization.

The vulcanizer, D and E, fits within the hollow cylinder, B, but not so tightly but that the hot air and products of combustion can escape and it can readily be removed, when the operation is completed; it can then be placed in cold water to be cooled more rapidly, if desired, and the charge removed.

To the gas tube, F, or feeder from the lamp, when a lamp, H, is used (and a spirit or other lamp will be sufficient, where gas is not used), is attached a graduated plate or disk, G, over which moves the cock lever, *b*, or an index hand to measure the quantity of gas or spirit burned.

When the vulcanizer is first placed over the burner a full flow of gas or spirit, may be used, so as to raise quickly the heat to the required temperature, after which only such a supply will be required as will preserve the temperature uniform and the exact quality necessary for such purpose can be determined by the position of the lever or index, *b*, upon the graduated disk, G. This arrangement thus affords a convenient and certain way of keeping the temperature at the required point, which is highly desirable for perfect vulcanization, and of certainly regulating the supply of gas or spirit for such purpose. If a spirit lamp, H, is used, the flow of the liquid may be further controlled by making the lamp movable upon a standard, *c*, so that by raising or lowering the lamp, H, the flow will be more or less rapid.

This arrangement for controlling the supply or flow of gas or spirit is not intended to be claimed in the present application. The water for the generation of the steam is put directly in the vulcanizer, D, in whch are put supports of any kind to sustain the article to be vulcanized. The cover, E, being tight, and no steam escaping, the water in the vulcanizer is prevented, in a great degree, from having such agitation as is usually the case, when boiled, and does not, therefore, come in immediate contact with the article to be vulcanized.

In vulcanizing machines as heretofore constructed, the vulcanization has been effected by high heat, generally produced by steam and in vessels or chambers not in contact or immediate connection with the boiler where the water is, or if the two vessels containing the water and the thing to be vulcanized have been in contact, there have been used, as in the Patents of Roberts & Demorest of May 10th, 1859, diaphragms or plates or disks to separate the water from the vulcanizing chamber, and prevent it, the water, from reaching the article being vulcanized. All such devices are, however, rendered unnecessary by this invention, and the same chamber which contains the water, holds also the thing being vulcanized.

For very many uses, as for vulcanizing bases for artificial teeth, and like operations, it is very desirable to have a machine which will accomplish the vulcanization with the smallest quantity of water, and with the least consumption of fuel, and which can be used without causing any unpleasant odor.

With the above-described machine two vulcanite bases can be produced in about three hours, with the use of less than half a pint of water, and without consuming as much gas as is delivered from an ordinary burner, or with less than half a pint of alcohol, and without any odor or smell whatever. The vulcanizers are generally made of a size just about sufficient to hold two pieces, or bases, but may be made to hold four or more as desired.

The construction of this vulcanizer is such, from its being perfectly tight, and from the substitution of the fusible plug, which cannot leak, in place of the safety valve, that the operation of vulcanization is performed with the smallest possible space of water and steam chamber, and with the smallest quantity of water and least consumption of gas, spirit, &c.

I am aware that fusible plugs have been applied in steam boilers and some other apparatus; I therefore do not claim broadly a plug of fusible metal, nor do I claim any combination of metals for the purpose of forming such a plug.

What I claim as my invention, and desire to secure by Letters Patent, is the construction and arrangement of the vulcanizer substantially as described, whereby the process of vulcanization is carried on and effected in the same vessel or chamber in which the water is contained.

2d. I claim a fusible plug or disk in combination with a vulcanizer chamber, substantially as and for the purpose set forth and described.

E. A. L. Roberts.

S. D. Law,
J. C. Wilson, } *Witnesses.*

E. A. L. Roberts,

vs.

B. W. Franklin & Son.

We herewith lay before our readers copies of E. A. L. Roberts's two patents on his improved vulcanizers, and propose to present an abstract of the proceedings in the suit for infringement of Roberts *vs.* Franklin & Son, which has just been decided in favor of the plaintiff.

On the 23d of December, 1863, in the Circuit Court of the United States for the Southern District of New York, E. A. L. Roberts, through his attorneys G. & M. Sackett, brought suit against B. W. Franklin & Son for infringement on the two above-mentioned patents, the plaintiff setting forth in his complaint, in the usual manner, the grievances to which he had been subjected. After stating that the said first patent had been originally owned by one Wm. J. Demorest, and E. A. L. Roberts conjointly, and that on or about the 23d day of November, 1859, the said Demorest had sold and assigned to the said Roberts all his right, title, and interest in the said patent, the complaint alleged that the said defendants had unlawfully and wrongfully, and without the license, consent, or allowance of this plaintiff, made, constructed, used, and vended to others to be used, his invention and improvements, and substantial and material parts thereof. And that said defendants had derived large gains and profits therefrom, and had declared their intentions to increase and extend their said business, and to make and sell more of said vulcanizing apparatus and machines, in infringement of said Letters Patent, all to the great injury and damage and deprival of great gains and profits of the said plaintiff, and that the said plaintiff had thus sustained actual damage to the amount of five thousand dollars, and that by virtue of the statutes an action had accrued to said plaintiff against said defendants to recover said actual damage, and such additional amount, not exceeding in the whole three times the amount of said actual damage, as the Honorable Court might see fit to order and direct.

To which the said defendants by their attorney, Geo. D. Sargeant, made answer, in brief, that they were not guilty of the said charges as laid down in the complaint of the said plaintiff; and further, that the said plaintiff was not the original inventor of the said vulcanizing machine, but that the same thing had been invented by one Papin, of France, long prior to the invention thereof by said Roberts and Demorest, and that a description of said Papin's invention will be found printed and published in a Dictionary of Chemistry and Mineralogy, with their applications, by Andrew Ure, page 400, London edition of 1835, and a drawing of the same on page 65 of Graham's Elements of Inorganic Chemistry, Philadelphia edition of 1858. And the defendants will also give in evidence. and in bar of plaintiff's right to recover, Letters Patent of the United States granted to B. W. Franklin, August 12, 1862, for improved vulcanizing Heaters or Boilers.

The following is a synopsis of the evidence produced upon the trial held at the United States Circuit Court for the Southern District of New York, 26th May, 1864. The case was opened by Gurnsey Sackett. The different vulcanizers of the plaintiff and defendants were exhibited, compared, and explained, also samples of vulcanite base were shown to the court and jury. The plaintiff's patents were offered in evidence. The patent to Roberts and Demorest was dated May 10th, 1859; the assignment of Demorest to Roberts was dated November 23d, 1859, and the reissued patent to Roberts was dated March 31st, 1863. The second patent to Roberts was dated February 27th, 1863. The assignment of Demorest's interest in the first patent to Roberts was admitted on the trial by the defendants. The patent of B. W. Franklin offered as a defence, was dated August 12th, 1862. The plaintiff offered in evidence an official copy of the file wrapper from the Patent Office of the plaintiff's application for his last patent, which shows that his application for said patent was completed the sixth day of September, 1859.

George W. Burt, sworn for plaintiff, proved that the defendants were partners; that he purchased a machine of defendants between the first of March and the first of December, 1863, etc.

F. C. Treadwell, Jr., sworn for plaintiff, says: is a solicitor of patents and a mechanical expert—much of my time occupied in court as an expert in patent cases. I have compared the vulcanizers of the plaintiff made after the specifications of his patents with the vulcanizer of the defendants here in court, and find their combination and arrangement nearly alike—each consists of a single chamber, and of a stove to confine the heat around the chamber. The defendant uses a lamp instead of coal, as plaintiff describes in his specifications, but it is merely an equivalent. The defendants' machine, instead of a thermometer has a ring with three compartments with metals in them fusible at different temperatures, that as the different metals fuse they indicate the heat similar to a thermometer though not as perfectly. The defendant in his machine does not use the fusible metal plug. In the second patent of the plaintiff he dispenses with the safety-valve. It is impossible to make a safety-valve perfectly tight. All safety-valves will leak some, and the gases generated in the process of vulcanization acting upon the surface of the metal, make it leak more and more, and a disagreeable odor of the rubber escapes. The mode of fastening the cover on the defendants' machine is merely a change in style from that of the plaintiff's and not in principle, etc.

E. A. L. Roberts was also called to prove the cost of making the machines, and price he sold them before others had infringed upon his patents, which price was twenty-five dollars.

The plaintiff here rested his case; and the defendants, through their attorney, George D. Sargeant, stated to the court that they had no further defence to make.

Judge Nelson then instructed the jury, after which a verdict was rendered for the plaintiff, sustaining his patents and assessing the damages.

Immediately after the rendering of the above verdict, the plaintiff, Dr. E. A. L. Roberts, issued the following License to the proprietors of Dental Depots and manufacturers of Vulcanizers:

"Now, therefore, this agreement witnesseth: that said Roberts, in consideration of one dollar to him in hand paid, by said Rubencame & Stockton, and the covenants of said hereinafter contained, agrees to allow and does license said Rubencame & Stockton, to manufacture and sell such machines; and said Rubencame & Stockton hereby covenant and agree, in consideration of the premises and agreements of said Roberts, to pay to the said Roberts ten dollars for each machine that shall be manufactured or sold by them containing the inventions and improvements, or employing them, or any of them set forth in said Letters Patent, or either of them; and said Rubencame & Stockton further agree to make and return to said Roberts, on the first of each and every month, a list which shall contain a just and full statement of the number of machines made or sold by them during the month last past, containing said inventions and improvements, or any of them, and to pay the said fee of ten dollars, upon each of said machines, to said Roberts. Thereupon, it is understood and agreed that no fee shall be paid by said Rubencame & Stockton upon any of such machines that may be sold by them, that they may have purchased of said Roberts, or any other person duly licensed by said Roberts to make or sell the same. It is further understood that said Roberts may at any time terminate the License, upon giving the said Rubencame & Stockton six months notice, in writing, of his intention so to do, and at and after the expiration of said six months all the rights of said Rubencame & Stockton, under this License, shall terminate and come to an end.

"Witness our hands and seals, this ninth day of June, 1864.

"E. A. L. ROBERTS, [L. S.]
"RUBENCAME & STOCKTON, [L. S.]

"Witness, JOHN R. BUCKINGHAM."

LIST OF PROPRIETORS OF DEPOTS WHO HAVE TAKEN OUT LICENSES.

RUBENCAME & STOCKTON, Philadelphia, Penn.
W. A. DUFF & Co., " "
ORAM, ARMSTRONG & JUSTI, " "
JOHNSON & LUND, " "
THOMAS E. VINDUZER, " "
NEAL, McCURDY & NEAL, " "
ASAHEL JONES, New York.
J. D. CHEVALIER, New York and Boston.
JOHN L. McDERMUT (Manufacturer), New York.

The plaintiff also issued the following License to dentists, giving them, on certain conditions, the right to use vulcanizers:

"*Whereas*, EDWARD A. L. ROBERTS is the owner of certain Letters Patent of the United States, and of the rights therein granted and secured; one of which patents is dated March 31st, 1863, and marked Re-issue No. 1444, and one dated 27th January, 1863, marked No. 37,523, both of which were issued to said ROBERTS; and one other, dated May 22d, 1860, marked No. 28,428, issued to SYLVESTER S. WARREN, and afterwards assigned to said ROBERTS;

"*And whereas*, J. W. NORTHAM is desirous of using a vulcanizer, employing the inventions secured to said ROBERTS by the above patents;

"Now this agreement witnesseth, That said E. A. L. ROBERTS, in consideration of 25 Dollars, to him in hand paid by J. W. NORTHAM, consents that said J. W. NORTHAM may use the machine purchased by him of E. A. L. ROBERTS, embodying the improvements and inventions secured to said ROBERTS, by said Letters Patent, during the continuance of said Patents, or any of them.

"E. A. L. ROBERTS.

"J. W. NORTHAM.

"Dated New York, June 15th, 1864."

Such are the facts as they appear before the public in this important patent suit. We have received many inquiries as to the actual state of the case, and as we are in possession of some points of interest to the profession not yet made known to them, we deem it our duty as journalists, who have specially at heart the question of Red Vulcanite in all its phases, to ventilate the subject to the best of our ability and knowledge.

It may be remembered that in the September number of our JOURNAL, we referred to the fact that there was about to be a suit commenced by E. A. L. Roberts against B. W. Franklin, for infringement.

Knowing that the defendant in this suit was famous for his ability to creep through the smallest kind of holes, and fearing the plaintiff might be entrapped into admitting a compromise judgment, we promised our readers to keep posted on the question, and without fear or favor to tell the truth, the whole truth, and nothing but the truth, concerning this great suit.

This, in so far as lay in our power, we have conscientiously done. We have kept our reporter busy day and night in ferreting out the true intentions of all concerned, to the end that no "rubber farce" should be put on the stage in place of the drama which had been promised us. In the early stages of his investigations, it became evident to our reporter that the defendant in the suit, aided by the legal acumen of the learned counsel of the A. H. R. Co., was moving heaven and earth to gain his case; and it also soon became manifest that the point on which he would rest it would be that of proving the plaintiff not to have been the first inventor of the article on which he claimed an infringement.

The said defendant hoped to prove that he was the inventor of the article in question, which the evidence shows him to have patented two years after the plaintiff applied for his patent. The evidence by which the defendant hoped to prove himself the inventor is rather original, as it consists chiefly in bringing forth the invention of one M. Papin, in the early part of the 18th century, called "Papin's Digester," and on which the defendant claimed the plaintiff's Vulcanizer to be an infringement; or, to state the matter algebraically: "A., to prove that B. had infringed on his invention, brings forward C., who had invented the same article before either of them." As it happened, however, that the talented expert employed by the plaintiff in this suit, soon discovered a radical difference between the two articles, [*vide* evidence of Francis C. Treadwell, Jr.] this evidence fell to the ground.

Now the defendant in this suit, who for the past five years has been preaching the enormity of infringement upon patent rights, and whose *apparent* virtue considerably outshone that of Joseph, had been for a length of time himself infringing on the rights of the plaintiff, in manufacturing vulcanizers, until the amount of sin which had been piled up against him was enough to swamp a much stronger vessel.

Finding, after examination and consultation, that his case was a bad one, the defendant in the suit concluded, like the coon mentioned in history, that the plaintiff needn't fire, for he would come down. We spare our readers a detailed recital of the melancholy pleading of this sly old fox, by which he wrought upon the tenderness of the plaintiff until he agreed to take only nominal judgment. We refrain from giving the particulars of that mournful tale of the "little farm" which defendant had saved out of his scanty earnings,—the hard wrung profits of dentists, bamboozled out of license-fees.

The profession knows full well that the savings over his $2,000 a year—the salary which he received as scarecrow in chief of the A. H. R. Co.—would never have sufficed to purchase that "little farm well tilled," and they must naturally imagine that no small share of its purchase-money may have been the profits on sales of these very vulcanizers, whose manufacture was an infringement on the legal rights of the plaintiff.

However, the defendant could not stomach the notion that his diminutive homestead should be placed under the hammer, to satisfy the voracious maws of gluttonous lawyers. Any thing was better than that; so he begged hard and long, he squealed like a rat under the harrow, and the plaintiff, too tender-hearted by far for his own interests, consented to forego his just judgment, and let the defendant off on his promise to go and do so no more.

So the defendant was left in peaceful possession of his domain, and here the story ought to end. But, unhappily for the frailty of humanity, the defendant in this suit no sooner found himself out of the water, than he began to abuse the bridge that had carried him safely over. He had, by his cunning tricks, humbugged the plaintiff into letting him off with a nominal judgment, when, as the verdict shows, he could just as well have had $5,000; and thinking himself out of danger, the wily old politician began to indite letters to other parties who were in the same box, advising them to "fight it out," they "couldn't be hurt," etc., etc. If he could only get some fool to throw his money away fighting what had been already proven a dead certainty, what would he care? Like his prototype the fox, who had lost his tail, he wanted all his friends to remove their caudal appendages, so that he might be in the fashion. To show his success in this line of business, we have only to refer our readers to the list of licensed Depots, which we have already given.

The coolness with which this chieftain of the Rubber Clan could state that the decision in this case was not final, after his statements in regard to the *question settled* in the "Toland" and "Roberts" Vulcanite cases, is worthy of the highest admiration. But it is well known that our "stage-manager" is an adept in impudence and scene-shifting. Meanwhile, our other old friends of the Red Vulcanite comedy, having all followed in the pernicious course of their leader, are likely to become notorious in similar suits, and they may rest assured that they will not get off by any means as easily. The plaintiff having been once deceived, will doubtless be found wide awake hereafter. The poor old fugleman—the jester of the sorry circus—whose dreary wit has served us for laughing-stock this many a day, gazes over his auriferous spectacles in holy horror, as he now finds himself called upon to answer and atone for all his wickedness. The "drummer" of the company will learn that retribution though slow is certain, and that although he has in these latter days turned his back on his old companions in arms, and has, we trust, seen the folly of his wretched course, yet he must reap the reward of his former evil communications, and must come down with his ten dollars, to sustain the Patent on which he has so long been infringing. All and singly, even-handed justice will eventually mark down the unhappy upholders of a miserable monopoly, and "hoist with their own petard" they will find how "sharper than a serpent's thanks it is to have a toothless child."

As for those who have only been connected with the Hard Rubber abortion as accessories after the fact—we refer to such of our provincial friends as have not yet toed the mark in this new infringement question—we hope they will soon be brought to see the error of their ways, and repent of their sins. Take, for example, Mr. S. S. White, who we believe owns several patents: one purchased of certain parties in this city, and which, if we are rightly informed, may be had cheap for cash at the present juncture; another, for a double-headed pin for rubber work. We would ask Mr. White how he would like his patents infringed upon? On principle, he would probably object to it; but he nevertheless proposes to fight the Vulcanizer patent, because the article is a source of large profit to him. Is this consistency? Mr. B. F. Whitney found the Roberts patent in advance of him at the Patent Office, yet he persists in his unnatural and wicked course of infringement. Alas! has the Hard Rubber Co. educated its disciples so badly, that they thus turn from the principles of their youth? "Train up a child in the way he should go, and when he is old he will turn and sting you."

We cannot impress too strongly upon the minds of the profession and proprietors of Dental Depots, that any person who makes, vends, or uses any Portable Vulcanizing Machine, except such as are made by E. A. L. Roberts, infringes upon his patent, and is liable to a suit at law in consequence. Fortunately all that has to be done is to procure with the vulcanizer a license to use it, such as we publish with this article, and safety is secured.

It may be necessary for us at this point to set ourselves right in regard to this question of Patents, once and forever.

We have always opposed dental patents on principle, because we don't like the system. We believe all professional discoveries ought to be thrown freely open for the use and advantage of the profession, and object to patents in dentistry for the same reason that they are objected to in medicine, because they savor of quackery, and because in nine cases out of ten, the so-called specifics and cure-alls do more injury than they do service, both to the practitioner and the patient. But certainly, if we could forgive patents at all, it would be in mechanical fabrications; and although we object to and denounce the whole system of artificial work on vulcanite base, yet, if people will use it because it is cheap, the man who devotes his time to the invention of labor-saving and time-saving machinery for its production, has certainly the right to have his own time and labor paid for, and his invention protected.

Then again, we oppose all patents whose owners put an exorbitant and ridiculous price upon their work, as in the case of the Hard Rubber Patent. In that instance, $100 was charged for an office-right, extending over only five or six years, and even now its owners have the effrontery to demand $75 for a license to run eleven months.

Against such imposition we have earnestly set our face, and if the present patentee had followed such a course, we should, in spite of our relations to him, have felt in duty bound to oppose what we should have considered an unjust attempt to victimize and defraud the profession.

Whatever may be the actual value of Hard Rubber to the Dental profession, we presume no one will deny that it would have been valueless without the portable vulcanizers, the first of which that was really useful, being the one invented by Roberts and Demorest. This led to the discovery of the smaller sized vulcanizer, which was after all only the large one cut down, and fitted with a fusible metal plug for a safety-valve. This invention may be considered to be equally as valuable to the Dentist, as the Hard Rubber itself to those who use it, and yet the price of a license to run seventeen years is only ten dollars, or twenty-five dollars for a machine with license included. Certainly as a method of saving the trouble and expense of a lawsuit, the payment of such small sums ought not to be weighed for a moment in the balance with the advantages gained; and we consider the plaintiff in this case to have acted honorably and liberally in placing his price so low, when he might have made of his invention a lucrative and valuable monopoly, at the same time destructive to the interests of the profession.

REMOVALS OF DENTAL DEPOTS.

Mr. J. D. Chevalier has removed from his old quarters to No. 737 Broadway, as will be noticed in his advertisement in this number of the Journal. We learn that he has also opened a branch depot at No. 22½ Winter Street, Boston. Mr. Chevalier's ability as a caterer to the profession is too generally admitted to need any evidence from us.

We have removed our own dental depot from 691 Broadway to No. 55 Bond Street, where we are ready to supply our old customers at the lowest market prices, and where we desire to have all our exchanges for the New York Dental Journal addressed, also all business letters, etc.

Messrs. Sutton & Raynor, so long and well known, have retired from business.

Our ancient friend of Hard Rubber notoriety, Mr. B. W. Franklin, we are informed has also retired from business, and settled down on his little farm, where may the prayers of all good Mussulmans follow him.

E. A. L. Roberts continues at his old establishment, No. 56 Bond Street, where he continues to supply the dental profession with all dental materials, and to manufacture for wholesale and retail his new patent vulcanizers, and where all workers in red vulcanite are especially invited to call and see him.

We believe Mr. S. S. White continues in his former locality.

Last, but not least, our old friend A. Jones has not removed that we are aware of, but continues to keep open his spacious and elegant establishment, at 724 Broadway, where all his old friends will find him as liberal and urbane as heretofore.

The number of his friends is legion, and many now rising high in the profession can date their first impulse from the generosity and kindness of Mr. Jones, and will follow him with their friendship and patronage wherever he may go.

GONE TO THE WAR.

Our co-editor and friend, Dr. G. Watt, has entered the service of our country, in the capacity of Surgeon to the 154th O. N. G., to be gone a hundred days. He is now stationed at New Creek, W. Va., said to be a very good place for guerrillas.

By this arrangement, the readers of the *Register* will suffer loss. We all suffer from this war; but we make this timely announcement that our readers may know what's the matter for the next three months.

We trust he will return at the end of his term safe, much strengthened and invigorated by the change.—*Dental Register.*

Prolongation of Anæsthesia by Chloroform.—Drs. Ehrlenmeyer and Nussbaum state that by the subcutaneous injection of a solution (one-eighth grain) of morphia, the anæsthesia produced by chloroform may be prolonged without danger over many hours.

A friend who has recently passed a successful examination at Washington, qualifying him for the rank of Surgeon of Volunteers, gives us the following account of his examination:

"The examination commenced on Monday, and was continued every day through the week. Four days of written replies to questions, the candidates being placed in a room, with writing materials *et preterea nihil*, except an orderly to prevent communications. Fifth day, each candidate taken alone by one of the commission of three. Oral examination. Sixth day, at Douglas Hospital, in the wards and dead-house. Operations on the subject. The object of the Board seemed to be not merely to ascertain whether the candidate knew enough to be a Surgeon or Assistant Surgeon of Volunteers, but to discover the whole extent of his attainments. In anatomy, chemistry, physiology, pathology, his point of saturation (so to speak) was reached. This you will see can be readily done by a division of subjects among the members of the Board. I should have said that an autobiography is required and a disclaimer of any connection at any time with any form of irregular practice. With all this you will see that the Government is put in possession of the full professional value of each of its medical officers of this corps."—*Dental Register.*

GROWTH OF BONE.—M. De Lamballe appears, in the course of his extensive researches on the generation and reparation of tissues, to have corroborated the assertions of M. Flourens. 1. That the bones increase in thickness by external and superimposed layers. 2. That they increase in length by the addition of terminal layers arranged in juxtaposition. 3. That proportionally as the new layers are deposited externally, the older ones on the inner surface are resorbed. 4. That ossification consists in the regular and successive conversion of periosteum into cartilage, and of cartilage into bone.—*Popular Science Review.*

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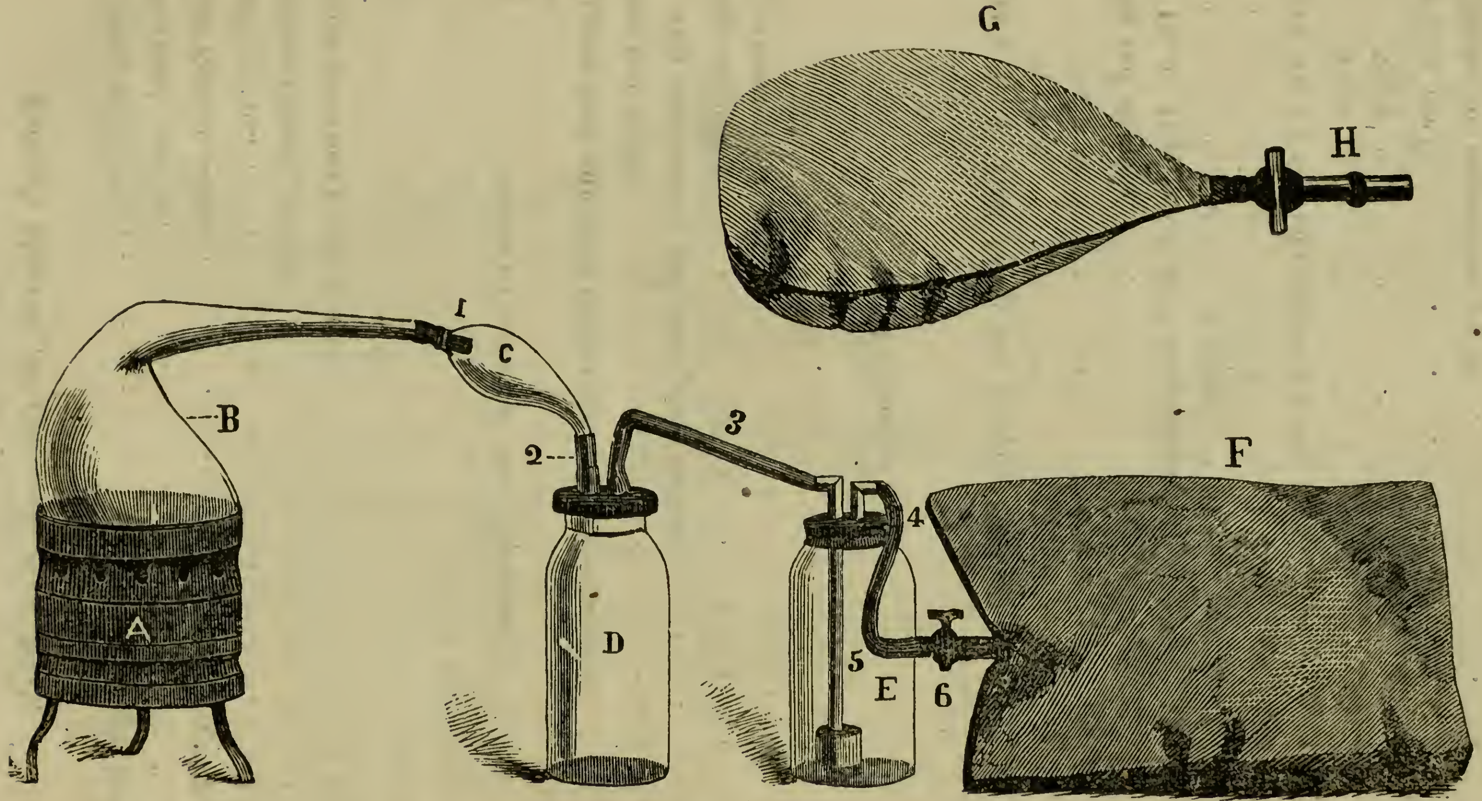

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Platina, best French,	at the lowest market price.
Pure Gold, per dwt.	" " "
Gum Enamel, per oz.,	2 50
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Roberts's Continuous Gum Furnaces.

No. 1, Large Size, with three muffles and three slides included,	$25 00
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Vulcanizers.

Whitney's No. 1 Flask Lamp, &c., complete for use,	$25 00
" No. 2-2 " " " "	25 00
" No. 3-3 " " " "	25 00
Boxing and shipping,	50
Hay's, Dr. J., Dry Heater, for 1 case, complete,	25 00
" " " 2 cases, "	25 00
" " " 3 " "	25 00
Roberts's No. 1 Price, all complete for use,	25 00
" No. 2 " " "	25 00
" No. 3 " " "	25 00
Rubber Base, per lb.,	4 00
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Files, Scrapers, Flasks, and all articles for the Rubber Base.

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Gold plate, 18 carats, per dwt.	at the market price for gold.	
" for clasps, "	do.	do.
Gold solder, per dwt.,	do.	do.
Pure Gold, "	do.	do.
Platina, best French, per oz.	do.	do.
Silver Plate, per oz.,	do.	do.
Silver Solder, per dwt.,	do.	do.
Silver Precipitate, per oz.,	do.	do.
Townsend's Amalgam, "	do.	do.
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Tin, lead, zinc, and all other metal at the lowest market prices.

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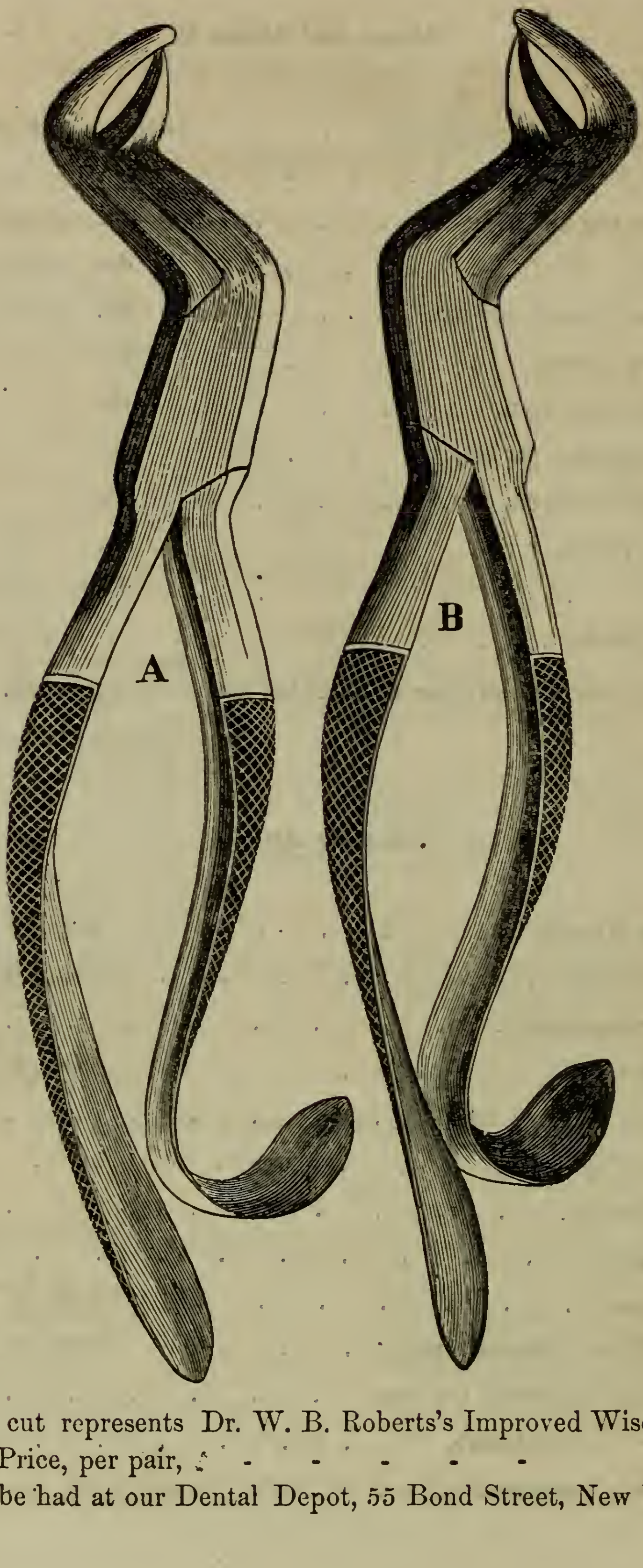
Hair Brushes,	from 0 6	to 0 75
Melting Ladles, different sizes,	from 0 25	to 0 40
Bone Filling, Roberts's, per box,		1 00
" " Dieffenbach's, "		1 00
Plaster Paris, per quart,		0 06



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THE

NEW YORK DENTAL JOURNAL,

PUBLISHED ON THE

FIRST OF MAY and DECEMBER.

EDITED BY

W. B. ROBERTS & FRANK H. NORTON.

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The Dispensary and Laboratory of the College will be open, and preliminary lectures will be delivered by one of the Professors every day during the latter half of October, commencing on the 17th inst.; the lecture on Wednesday of each week, at 3 o'clock P. M., to be devoted to *Clinical* teaching. The regular course of instruction will commence on the first of November, and continue until the close of the ensuing February.

The Lectures will be amply illustrated by the extensive and *valuable* collections of Anatomical, Pathological, and Mineralogical specimens, and the Philosophical and Chemical Apparatus of the incumbents of the various Chairs, and every opportunity will be afforded in the Clinic and Laboratory for obtaining a *practical* knowledge of Operative and Mechanical Dentistry.

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Matriculation (paid but once)	$5.00
Tickets for the Course, including the Demonstrators'	100.00
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July, 1864.

E. A. L. ROBERTS'S

IMPROVED

Vulcanizing Apparatus.

THE attention of the profession is respectfully invited to the improvement over all other vulcanizers comprised in the above machine, and also to its great convenience, and adaptability to the necessities of those who desire to do artificial work. The peculiarities of this vulcanizer and its great merits consist in compactness, lightness, strength, and capacity.

It is so constructed that two cases may be vulcanized in it in about two hours, with the most satisfactory results; while, from the peculiar construction of the burner, it is impossible that a sufficient amount of heat should be generated to produce an explosion. Its principal beauty is its simplicity; it is so little complicated that the operator, by correctly following the directions, may leave his case without further attention, satisfied that at the expiration of a certain period of time he can return and find it properly vulcanized.

A great improvement which will be found in connection with this vulcanizer, is my new style of flask. As the top of this flask is cast to the rim, it is rendered much stronger than if they were separate; and as it is fastened by three screws, placed in the form of a triangle, it will be found easy to get just three times as much power as with the old thumb-screw; by these means, also, the flask can be always kept in its place, preserving the articulation, and always securing for the operator a plate of equal thickness, no matter how unequally the rubber may be placed.

This flask is more easily packed than our old pattern; less likely to get out of order; and will contain the largest possible set of teeth, while it occupies the least space.

For strength, durability, and convenience, this flask will be found to be the best ever offered to the profession.

The alcohol reservoir and burner attached to this vulcanizer, have also new and peculiar merits.

By an extinguisher attached to the burner, the amount of heat can be so regulated as to insure absolute safety and perfection in the work. A little arrangement of measuring-cups goes with the machine, consisting of four; the larger, if filled with alcohol, and that emptied into the reservoir, and the second size filled and emptied into the burner, will keep the vulcanizer going long enough to vulcanize the two cases. If this should not prove to complete their vulcanizing, fill the third size, which represents 20 minutes, or the fourth size, representing 15 minutes, and

pour upon the burner. If but one case is vulcanizing, the space of the second must be filled up with water, as there must always be the same amount of matter in the vulcanizer.

This vulcanizer, flask, and alcohol-burner combined, comprise the most perfect apparatus of the kind ever offered to the profession. I desire to call particular attention to the strength of the machine, as attested to in the official certificate appended to this advertisement. After bearing a pressure of three hundred pounds to the square inch (that being all the gauge would indicate), the combined weight of two heavy men was brought to bear upon it without effect; not a screw started; indeed there is no doubt but it would bear without injury any pressure possible to be applied to it. The cover of this machine is fastened by four screw-bolts, secured with strong nuts; the packing is contained in a groove turned in the cover, rendering it absolutely tight and impossible to blow out; while no vapor or odor can escape from it, and it is not disagreeable while vulcanizing, whether in the laboratory or parlor.

When it is considered that less than two ounces of alcohol will vulcanize either one or two pieces, at a cost of one cent and a half; that there is no danger of explosion, and that the result produced is absolutely the very best that can be produced, and that without any care or attention after starting it, the profession must admit that I offer great inducements for purchasing. I am now manufacturing these machines, and am able to offer them to the profession, including stove, cylinder, alcohol-burner, thermometer, vulcanizer, wrench, two ordinary-sized iron flasks, and one very large one for extremely large cases; the whole neatly packed in a box 6 x 8 inches in dimension, and shipped to any part of the world for TWELVE DOLLARS ($12). Terms, Cash with orders, in Greenbacks.

The following cuts give an accurate representation of this apparatus.

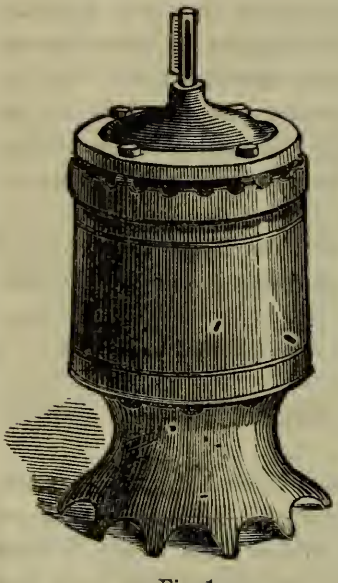

Fig. 1.

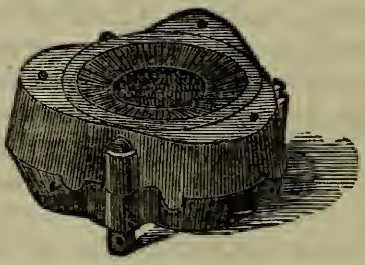

Fig. 2.

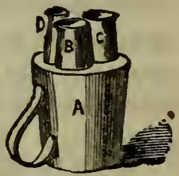

Fig. 4.

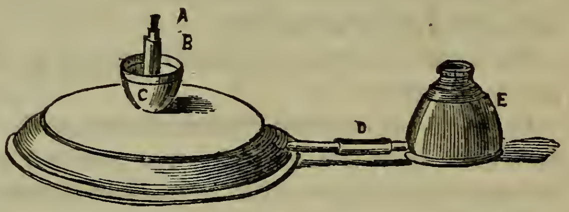

Fig. 3.

Fig. 1 represents the Vulcanizer. Fig. 2, my new improved Flask. Fig. 3, my improved Lamp, Reservoir, and Alcohol-Burner, in which A is the improved compound wick. This wick is an improvement upon my original wire gauze I introduced about five years ago; it is composed of wire and vegetable fibre, twisted into the form of a rope, thus the fibre is protected by the wire, rendering it indestructible, while at the same time it retains all its powers of capillary attraction. B, the extinguisher; C, the cup of the burner; D, the supply-pipe (rubber); E, the reservoir. Fig. 4 is the Measuring Cup: A, being the measure for the reservoir; B, the 30 minute measure for the burner; C, the 20 minute measure; D, the 15 minute measure; the uses of which have been already explained. I may here mention that I am manufacturing my new improved flask in brass, and can supply them at $1 each.

(I would state that my Mercurial Thermometer, furnished with this vulcanizer, is also made on a new principle. By not allowing the steam to fall directly upon the bulb, while it receives the full influence of the heat, I avoid much of the danger of breakage. My thermometer is small, strong, and can be carried in the vest-pocket, or sent in a letter without danger of breaking.)

Directions for Using my Vulcanizer.

Before attempting to vulcanize a piece, it is necessary to gauge the extinguisher (B, Fig. 3) attached to the burner. In order to do this, fill the vulcanizer with water to within half an inch of the top; place the cover on the machine as the marks indicate, and screw down the bolts equally, until there can be no leakage. Now fill the measuring cup (A, Fig. 4) with alcohol, and pour it into the reservoir (E, Fig. 3); next fill the measuring-cup (B, Fig. 4) with alcohol, and pour it into the cup of the burner (C, Fig. 3); light the burner, place the vulcanizer over it, and let it heat up; as soon as the thermometer shall indicate the highest temperature at which your piece is to be vulcanized, regulate your extinguisher by raising or lowering it until the thermometer shall have stood steadily at that point at least thirty minutes. To regulate the extinguisher, remove the vulcanizer and use a pair of pliers; if necessary, the wick can be trimmed with shears.

Now blow out the light and cool off the machine; empty the water out of the vulcanizer, and the alcohol from the reservoir and burner; put in your pieces, refill the vulcanizer with water to within half an inch of the top; put your fresh alcohol in the reservoir and burner as directed above, and the machine is ready for vulcanizing. Always be careful to follow the directions in screwing on the cover. It is only necessary to regulate the extinguisher when a new machine is first used, when some accidental displacement occurs, or when the alcohol varies at least ten per cent. in quality from that last used.

By strictly following the above directions full confidence may be felt in this vulcanizer; and the operator, after setting it to work, can leave it to perform its allotted task, knowing that when the alcohol in the burner and in the reservoir is burned out, his piece will be found perfectly vulcanized.

NOTICE.

In 1858, I made the first one-chambered vulcanizer, cast in one continuous piece of metal, ever manufactured. My specification claims for "casting or forming a vulcanizing steam and water chamber, in one continuous piece of metal." My Patent for the above invention is dated May 10th, 1859.

In 1860 I applied for a patent for a small-sized one-chambered vulcanizer.

My specification for this invention claims "to vulcanize in the same chamber containing the water;" and also for the "use of a fusible metal plug and combination." Owing to the delays of the Patent Office, this Patent was not granted to me until January, 1863.

By my Patent of 1859, I can hold responsible the makers of all vulcanizing machines constructed in one continuous piece of metal, as infringers and trespassers upon my legal rights.

Under my Patent of 1863, I can hold responsible all persons who manufacture machines vulcanizing in the same chamber containing the water, and using my fusible metal plug and combination, either or both.

I therefore warn all manufacturers of vulcanizers to avoid infringing on these my patents, as I shall certainly resist them with the strict letter of the law.

The following is a correct copy of the certificate to the strength and endurance of my new vulcanizer.

Central Department of the Metropolitan Police,

300 Mulberry Street,

New York, *May 2d*, 1863.

"This is to certify that on this 2d day of May, 1863, a copper vulcanizer of E. A. L. Roberts's Patent has been subjected to a hydrostatic pressure of *three hundred pounds to the square inch* (this being all our gauge would indicate), and is safe to sustain a working pressure of two hundred pounds of steam to the square inch.

"B. G. LORD,

" *Captain Sanitary Police.*

" N. B.—Equal to a temperature of three hundred and eighty-seven degrees."

E. A. L. ROBERTS,

Dental Depot, 56 Bond St., N. Y.

A. JONES,

DENTAL DEPOT,

Removed to 724 Broadway, New York.

The firm of Jones & White is dissolved, to take effect May 1st, 1861. All debts due the New York house to that date will be collected by A. Jones, at his office 724 Broadway, where he will keep constantly on hand a well selected stock of Teeth from Oram & Armstrong (three first-class premiums received), D. H. Porter, and S. W. Stockton. Also an entire new stock of Dental Instruments of the very best manufacture, together with every article used by the Dental profession.

A discount of ten per cent. will be made on all cash bills for Teeth amounting to $20, and like proportion on larger amounts.

JOHN BIDDLE,

MANUFACTURER OF

DENTAL INSTRUMENTS

OF EVERY DESCRIPTION,

No. 207 CENTRE STREET,

NEW YORK.

Instruments Repaired in the Best Manner, and at the Shortest Notice.

The Watts Crystallized Gold Foil Manufacturing Company,

NEW YORK.

A. J. Watts begs to inform his friends and the profession that he is permanently engaged with the above Company, and is now preparing Crystal Gold, Crystal Gold Foil, and Soft or Non-Adhesive Foil, superior to any heretofore made by him. He now has every facility necessary for manufacturing, and all orders will meet with prompt attention. Please address

A. J. WATTS, Agent, Box 1296, New York.

TO BE HAD AT ALL THE DENTAL DEPOTS.

N. B.—Beware of spurious imitations, as parties are endeavoring to sell the profession a different article by using my name.

None genuine unless marked "The Watts Crystallized Gold Foil Manufacturing Company."

THE COLTON DENTAL ASSOCIATION

Extract Teeth Without Pain,

BY THE USE OF THE

NITROUS OXIDE GAS.

I have administered this gas every day (Sundays excepted), for one year as an anæsthetic for the extraction of teeth—having first introduced it among the dental profession—and have never met with a single failure, or had the operation attended with the slightest ill effects. Whether our patients have had one or twenty teeth out at a sitting, no one has ever desired even to lie down after the operation. Is not this fact alone an unanswerable proof of the value of this agent over ether and chloroform? A large number of the leading dentists of New York, who do not care to extract teeth, now regularly send us their patients who desire to take an anæsthetic. Probably no higher medical or chemical authority can be cited on the subject, than the following letter from Professor VANDER WEYDE of the New York Medical College. I put this testimony, and my *experience*, against any thing that has been said against its use by those who have had *no* experience with the gas:

Cooper Union for the Advancement of Science and Art.

NEW YORK, *March* 26*th*, 1864.

DR. G. Q. COLTON:

DEAR SIR:—In answer to your letter, asking my opinion about the comparative safety of nitrous oxide gas and ether or chloroform, I must say that as soon as you introduced this gas among the dental profession, I immediately advocated its use, and pointed out, principally to my class in the N. Y. Medical College, the advantages connected with an anæsthetic, which in itself is a powerful supporter of combustion and of respiration, in place of the suffocating ether and chloroform. The fact that you have administered it to about 20,000 persons, without a single fatal result, is an unanswerable proof of its safety as an anæsthetic.

I am satisfied that nitrous oxide can be used in all cases where ether and chloroform cannot be safely administered; in many cases, the use of the two last-named anæsthetics, is by judicious physicians considered unsafe: notwithstanding this, there are too many cases on record where the counter-indications were overlooked, and fatal results have followed the use of ether and chloroform. I know of no case in which I would consider nitrous oxide gas unadvisable, except in a stage of consumption so far gone that the excitement attending the extraction of a tooth, would be unsafe *without any anæsthetic.*

When, now, we look at the hundreds of cases directly killed by ether or chloroform, on the operating chair or table, the comparative value of nitrous oxide must be apparent.

It is a singular fact that among the three anæsthetics now in use—ether, chloroform. and nitrous oxide,—the first is combustible in itself, though the very *opposite* of a supporter of combustion and life; the second, chloroform, is neither combustible nor a supporter of combustion; while the last, nitrous oxide, *is a powerful supporter of combustion and of life!*

The difference between the nitrous oxide and ether and chloroform is that the first being a supporter of combustion and respiration, stimulates the nervous system and produces an increase of vitality, while the two others, ether and chloroform, being non-supporters of combustion and respiration, depress the nervous system, and brings vitality below the standard, though with the same final result, *perfect unconsciousness;* the difference only is that the unconsciousness produced by the increase of vital action by the nitrous oxide is harmless, and the same result produced by the depression of vital action by ether or chloroform is injurious, and may prove fatal.

Very respectfully,
P. H. VANDER WEYDE, M. D.,
Prof. of Chemistry N. Y. Medical College, and at Cooper Institute.

During the year past I have given instructions to a large number of dentists in all parts of the country, to make and administer the Nitrous Oxide Gas. And so far as I have been able to learn, not one of them has failed of the most entire and satisfactory success. *It is the nice details of the business which must be understood.* My charge for such instructions is $25—and I guarantee satisfaction. There are but few dentists, especially in the country, who cannot double their business by the use of the gas.

I can send evidence to any one desiring it, that the stories started some time since, by interested parties, of fatal effects of the gas, *had no foundation in fact.* Here in New York, where the stories originated, and where the facts are known, our business was never so good as it is now.

My apparatus is of my own invention, cheap, easily managed, and is the *best* for securing a perfectly pure and safe article of gas.

Address,
G. Q. COLTON,
Colton Dental Association,
22 Bond Street, N. Y.

JOHN D. CHEVALIER & SONS,

DENTAL DEPOT,

NO. 737 BROADWAY,

BETWEEN

WAVERLEY PLACE AND EIGHTH STREET,

AND

DIRECTLY OPPOSITE ASTOR PLACE,

NEW YORK,

AND

22½ WINTER STREET, BOSTON.

DENTISTS'

OPERATING CHAIRS.

S. S. White's Chair, covered with plush, .	Lowest Market Price.
“ “ “ “ superior article of rep .	“
“ “ “ “ “ “ plush .	“
Perkins' Improved, walnut imitation rosewood, . . .	“
“ “ mahogany “ “ . . .	“
“ “ rosewood, ...	“
“ “ latest pattern, oiled walnut, . .	“
“ “ “ “ rosewood, . . .	“
“ “ walnut, imitation of rosewood, . .	“

ARCHER IMPROVED.—ASK'S PATENT.

No. 1. Black walnut or cherry, upholstered with enam. cloth,	“
No. 2. “ “ upholstered with figured plush, . .	“
No. 2. Mahogany, ...	“
No. 3. Black walnut, carved, upholstered with best plush, .	“
No. 4. Rosewood carved, upholstered with springs in back, as well as the seat covered with best quality of plush, seat raised by a wheel instead of crank, . . .	“
No. 4. Mahogany, same style and finish, ...	“

CHEVALIER'S UNIVERSAL DENTAL CHAIR.

Chevalier's Universal Dental Chair, ...	“

All the above Chairs for Sale at our Depot,

55 BOND STREET, NEW YORK.

W. B. ROBERTS & CO.

NOTICE

TO THE

DENTAL PROFESSION.

I have sued parties in the City of New York for infringing my patents for improvements in Vulcanizers, and have obtained a verdict sustaining my rights under said patents. And all persons making, selling, or using ONE CHAMBERED VULCANIZERS infringe upon my rights secured under all three of my patents and render themselves liable for such manufacture, sale, or use.

I have licensed the following parties keeping Dental Depots to make and sell vulcanizers, using and employing the improvements secured to me, from whom Dentists can obtain a license for ten dollars, under which they will be privileged to continue the use of their old Vulcanizers.

A. Jones,	**New York.**
J. D. Chevalier,	"
J. McDermut,	"
Rubencame & Stockton,	**Philadelphia.**
Oram, Armstrong & Co.,	"
Johnson & Lund,	"
Neal, McCurdy & Neal,	"
Thos. E. Vinduzer,	"
W. A. Duff & Co.,	"

Dentists can purchase Vulcanizers of any of these parties with safety, and a license can be obtained to use the same at the time of purchasing.

Persons purchasing Vulcanizers which infringe upon my rights from those not licensed by me, render themselves liable to damages for using them. I therefore take this method to notify the profession of my rights, so that they may not, without knowing it, infringe upon them. And all who have heretofore purchased machines which infringe on my patents can procure a license to use the same from any of the above licensed Depots.

I have commenced suits against others, and am about commencing suits against all who infringe upon the rights secured to me.

Among those infringing upon my patents are, S. S. White, of New York, Philadelphia, and other cities where he has Depots; B. F. Whitney & George Hayes, of Buffalo; J. M. Brown, Cincinnati.

I will notify the profession from time to time of manufacturers and dealers who may hereafter take out licenses, and I caution the public against purchasing machines of any one not having a license to sell.

I make my royalty ten dollars on each machine, which is less than seventy-five cents per year, and less than one-tenth of what the Rubber Co. charge for their privilege per year. It is my intention, after closing up these litigations, to still further reduce the royalty on them, and to supply the profession with the very best machines at the lowest possible price.

E. A. L. ROBERTS,
56 BOND STREET, N. Y.

W. B. ROBERTS & CO.'S

Teeth Manufactory

AND

DENTAL DEPOT,

No. 55 BOND STREET,

NEW YORK.

GOLD AND SILVER PLATE.

Platina Plate at the Lowest Market Price.

GUM ENAMEL, - - - -	$2.00 per oz.
BODY, - - - - - -	$1.00 "

BLOW PIPES.

Gold Foils of all the Best Manufacturers.

All the Most Approved Vulcanizing Machines.

ROBERTS'S IMPROVED FURNACES.

Lathes, Polishing Brushes, Forceps,

CORUNDUM WHEELS,

And every description of Dental Instruments and Dental Material.

1 gal
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